

THE Journal

OF THE ARKANSAS MEDICAL SOCIETY

Vol.115 • No. 4

OCTOBER 2018



Opioid Reduction Efforts: An Ongoing Battle

**Physicians Among Those at Work
on the Crisis Here in Arkansas**

Your job is keeping
your patients healthy.

So who's watching their
**health
information?**

AFMC Security Risk Analysis can help your practice:

- Comply with HIPAA directives
- Protect your patients' health information
- Identify and mitigate security risks/vulnerabilities
- Develop privacy and security policies/procedures
- Provide expertise and guidance for best practices
- Relieve staff burden

Contact us to learn more.

Visit afmc.org/SRA, call 501-212-8733
or email SRA@afmc.org.



Improving health care. Improving lives.





ON THE COVER

Opioid Reduction Efforts: An Ongoing Battle

Physicians Among Those at Work on the Crisis Here in Arkansas

80



79

Sandy Johnson, MD

**A Closer Look
at Quality**

84

Winner of the ASAE Excellence
in Communications Award

THE Journal

OF THE ARKANSAS MEDICAL SOCIETY

Volume 115 • Number 4 October 2018

Established 1890. Owned and edited by the Arkansas Medical Society and published under the direction of the Board of Trustees.

Advertising Information: Penny Henderson, (501) 224-8967 or penny@arkmed.org. #10 Corporate Hill Drive, Suite 300, Little Rock, AR 72205.

Postmaster: Send address changes to: The Journal of the Arkansas Medical Society, P.O. Box 55088, Little Rock, AR 72215-5088.

Subscription rate: \$30.00 annually for domestic; \$40.00, foreign. Single issue \$3.00.

The Journal of the Arkansas Medical Society (ISSN 0004-1858) is published monthly, by the Arkansas Medical Society, #10 Corporate Hill Drive, Suite 300, Little Rock, AR 72205. (501) 224-8967.

Printed by The Ovid Bell Press Inc., Fulton, Missouri 65251. Periodicals postage is paid at Little Rock, AR, and at additional mailing offices.

Articles and advertisements published in The Journal are for the interest of its readers and do not represent the official position or endorsement of The Journal or the Arkansas Medical Society. The Journal reserves the right to make the final decision on all content and advertisements.

© Copyright 2018 by the Arkansas Medical Society.

www.ArkMed.org

USPS Statement of Ownership

76

WHAT HAVE WE DONE FOR YOU LATELY?

DAVID WROTEN, EXECUTIVE VICE PRESIDENT

Tort Reform – Why AMS Supports Issue 1

78



PEOPLE + EVENTS

83

SCIENTIFIC ARTICLE

Deprescribing Antidepressants: *An overview with practical clinical scenarios*

Gaurav Jain, MD; Sarita Singhal, MD; Aman Mahajan, MD, MRCPsych;
Abhijit Ramanujam, MD; Shashank Kraleti, MD,FAAFP;
Sunil Kumar, MD; Sumit Fogla, MD, FAAFP, MBA

86

CASE STUDY

Traumatic Extradural Internal Carotid Artery Pseudoaneurysm Resulting in Insidious Onset Carotid Cavernous Fistula

92

Lindsay Mohny, DO; Sarah Hunton, MD; Rani Lindberg, MD



Join us to stay updated on health care news in Arkansas.

facebook

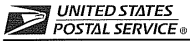
facebook.com/ArkMedSoc

twitter

twitter.com/ArkMedSoc



ArkMed.org



Statement of Ownership, Management, and Circulation
POSTAL SERVICE® (All Periodicals Publications Except Requester Publications)

1. Publication Title The Journal of the Arkansas Medical Society	2. Publication Number 0 2 8 3 - 8 6 0 0	3. Filing Date 09/15/2018
4. Issue Frequency Monthly	5. Number of Issues Published Annually 12 per year	6. Annual Subscription Price \$30.00
7. Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4®) 10 Corporate Hill Dr., Suite 300, Little Rock, AR 72205		Contact Person Nicole Richards Telephone (include area code) 501-224-8967

8. Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer)
10 Corporate Hill Dr., Suite 300, Little Rock, AR 72205

9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank)
 Publisher (Name and complete mailing address)
Arkansas Medical Society, 10 Corporate Hill Dr., Suite 300, Little Rock, AR 72215

Editor (Name and complete mailing address)
Arkansas Medical Society, 10 Corporate Hill Dr., Suite 300, Little Rock, AR 72215

Managing Editor (Name and complete mailing address)
Arkansas Medical Society, 10 Corporate Hill Dr., Suite 300, Little Rock, AR 72215

Arkansas Medical Society, 10 Corporate Hill Dr., Suite 300, Little Rock, AR 72215

10. Owner (Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.)

Full Name	Complete Mailing Address
Arkansas Medical Society	PO Box 55088, Little Rock, AR 72215

11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities. If none, check box None

Full Name	Complete Mailing Address

12. Tax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one)
 The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes:
 Has Not Changed During Preceding 12 Months
 Has Changed During Preceding 12 Months (Publisher must submit explanation of change with this statement)

PS Form 3526, July 2014 (Page 1 of 4 (see instructions page 4)) PSN: 7530-01-000-9931 PRIVACY NOTICE: See our privacy policy on www.usps.com.

13. Publication Title The Journal of the Arkansas Medical Society	14. Issue Date for Circulation Data Below September 2018	
15. Extent and Nature of Circulation	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies (Net press run)	4532	4629
b. Paid Circulation (By Mail and Outside the Mail)		
(1) Mailed Outside-County Paid Subscriptions Stated on PS Form 3541 (Include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	3429	3450
(2) Mailed In-County Paid Subscriptions Stated on PS Form 3541 (Include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	0	0
(3) Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS®	4	3
(4) Paid Distribution by Other Classes of Mail Through the USPS (e.g., First-Class Mail®)	0	0
c. Total Paid Distribution (Sum of 15b (1), (2), (3), and (4))	3430	3453
d. Free or Nominal Rate Distribution (By Mail and Outside the Mail)		
(1) Free or Nominal Rate Outside-County Copies included on PS Form 3541	1060	1115
(2) Free or Nominal Rate In-County Copies included on PS Form 3541	0	0
(3) Free or Nominal Rate Copies Mailed at Other Classes Through the USPS (e.g., First-Class Mail)	0	0
(4) Free or Nominal Rate Distribution Outside the Mail (Carriers or other means)	0	0
e. Total Free or Nominal Rate Distribution (Sum of 15d (1), (2), (3) and (4))	1060	1115
f. Total Distribution (Sum of 15c and 15e)	4490	4481
g. Copies not Distributed (See Instructions to Publishers #4 (page #3))	43	40
h. Total (Sum of 15f and g)	4532	4629
i. Percent Paid (15c divided by 15f times 100)	76	77

* If you are claiming electronic copies, go to line 16 on page 3. If you are not claiming electronic copies, skip to line 17 on page 3.

PS Form 3526, July 2014 (Page 2 of 4)



CONNECT WITH AMS

Follow and like AMS on Facebook, Twitter and Instagram to stay updated and be a part of the conversation.



Statement of Ownership, Management, and Circulation
POSTAL SERVICE® (All Periodicals Publications Except Requester Publications)

16. Electronic Copy Circulation	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Paid Electronic Copies		
b. Total Paid Print Copies (Line 15c) + Paid Electronic Copies (Line 16a)		
c. Total Print Distribution (Line 15f) + Paid Electronic Copies (Line 16a)		
d. Percent Paid (Both Print & Electronic Copies) (16b divided by 16c x 100)		

I certify that 50% of all my distributed copies (electronic and print) are paid above a nominal price.

17. Publication of Statement of Ownership
 If the publication is a general publication, publication of this statement is required. Will be printed in the October 2018 issue of this publication. Publication not required.

18. Signature and Title of Editor, Publisher, Business Manager, or Owner

 Date **08/27/2018**
 David Wroten, Executive Vice President

I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).

We can help your organization realize **DOUBLE DIGIT SAVINGS** on goods and services you buy every day with your existing suppliers!

Send us your purchase history and

WE WILL GET YOU A GREAT DEAL!

Or we'll prove that you already have the best prices in the marketplace. Either way... you will have **bottom dollar peace of mind** with



Just give us a try. Really, it's so easy... all you'll notice is a **BIGGER BOTTOM LINE!**

www.Buygility.com



Buygility is an affiliate of a multi-billion dollar Group Purchasing Organization (GPO) designed to benefit health care providers and non-medical businesses of all trades. With thousands of contracts covering millions of items, Buygility works with distributors, suppliers, and service providers so our members

SAVE MONEY EVERYDAY!

NO OBLIGATION • NO SIGN UP FEE • NO ANNUAL FEE



Tort Reform – Why AMS Supports Issue 1

Be sure to visit www.YesOn1.com to learn more about Issue 1 and to contribute.

DAVID WROTEN
EXECUTIVE VICE PRESIDENT



Issue 1 is an amendment to the Arkansas Constitution submitted to the voters by the Arkansas General Assembly.

It will be on the November ballot for all Arkansas voters to decide for themselves if this is right for our state.

The AMS certainly believes it is. In short, Issue 1 sets caps on attorney fees, sets minimum caps on non-economic and punitive damages, and authorizes the legislature to adopt what are called “rules of the court.” None of these provisions are novel ideas. Most states have enacted similar provisions either by law or constitutional amendment. All of our surrounding states have damage caps except Missouri. What Issue 1 *doesn't* do is cap economic damages. Those are typically related to past and future medical expenses, lost wages, future earning power, etc.

Issue 1 levels the playing field for our state. When businesses (or physicians) consider moving to a new state, one of the issues they look at is the legal climate. This is not to protect themselves from valid legal claims, but to ensure that the legal environment is not rife with attorneys looking for quick “jack-pot” justice cases.

Here are some pertinent facts:

Most medical malpractice cases never make it to a jury trial. Roughly 70% are dropped; another 20% are settled; and, of the remaining 10% that go to trial, only a small percentage result in a verdict for the plaintiff. However, the hidden costs associated with these cases can be enormous. Nationally, the average defense costs for “dropped” cases has been estimated at around \$40,000. Without caps, there is tremendous pressure to settle cases with questionable merit, and that’s the leverage plaintiff attorneys apply to get ever-increasing settlements.

One of the more emotional arguments we’re seeing against Issue 1 is the claim that it sets a value on human life. The opponents using that argument are disingenuous. The fact is that juries already place a value on human life with each verdict. The difference is that juries make those decisions based on raw emotion enhanced by the theatrics of trial attorneys. Issue 1 places a reasonable cap on these non-economic damages that is very much in line with what other states have done. The amendment ensures that punitive damages cannot be capped if the defendant intentionally harms someone.

Then there are the rules of the court: Contrary to what some opponents are saying, Issue 1 doesn’t prohibit the court from adopting its own rules. Issue 1 does, however, create a check-and-balance system by authorizing our elected legislators to enact laws that also address rules of the court. The amendment requires a 3/5 vote of both houses and doesn’t preclude a veto by the governor. Why is this so important? If Issue 1 passes, the Legislature would be able to pass other reforms that are vital to a balanced legal climate. For example, the 2003 Civil Justice Reform Act required plaintiff lawyers to submit an affidavit of merit within 30 days of filing a medical malpractice claim. That same law established rules governing expert witness qualifications. The Arkansas Supreme Court later decided that those were “rules of the court” and therefore unconstitutional. The fact is that without this provision in Issue 1, the court will never allow any type of meaningful tort reform to stand.

In November, Arkansans will have the opportunity to vote *for* or *against* tort reform measures that bring Arkansas’s legal system more in line with other states. Physicians have a major stake in the outcome, so the AMS encourages every member to get involved. For more information, go to www.YesOn1.com. AMS

David Wroten
Executive Vice President

Penny Henderson
*Executive Assistant
Journal Advertising*

Nicole Richards
Managing Editor

Jeremy Henderson
Art Director

EDITORIAL BOARD

Appathurai Balamurugan, MD, DrPH, MPH
Family Medicine/Public Health

Tim Paden, MD
Family Medicine

Sandra Johnson, MD
Dermatology

Issam Makhoul, MD
Oncology

Naveen Patil, MD, MHSA, MA, FIDSA
Internal Medicine/Infectious Disease

Benjamin Tharian, MD, MRCP, FACP, FRACP
Gastroenterologist/Hepatologist

Robert Zimmerman, MD
Urology

Tobias Vancil, MD
Internal Medicine

Darrell Over, MD
Family Medicine

EDITOR EMERITUS
Alfred Kahn Jr., MD (1916-2013)

ARKANSAS MEDICAL SOCIETY 2018-2019 OFFICERS

Lee Archer, MD, Little Rock
President

Amy Cahill, MD, Pine Bluff
Immediate Past President

Dennis Yelvington, MD, Stuttgart
President Elect

Chad Rodgers, MD, Little Rock
Vice President

George Conner, MD, Forrest City
Secretary

Bradley Bibb, MD, Jonesboro
Treasurer

Eugene Shelby, MD, Hot Springs
Speaker of the House of Delegates

Jim Ingram, MD, Little Rock
Vice Speaker of the House of Delegates

Danny Wilkerson, MD, Little Rock
Chairman of the Board of Trustees



Sandy Johnson, MD

Sunblock at School

“Dr. Sandy, will you please write a note so my child may apply sunblock at school?”

Have you even been asked this question? As a board certified dermatologist, I have been asked this question; unfortunately, I haven't been asked this question enough. It's even more unfortunate that it has to be asked at all.

Did you know that sunblocks are considered an over-the-counter medication by the FDA? Because of this, in Arkansas (and a few other states), you need parental permission and often a doctor's note for your child to use sun protection at school. There are many states that are creating and passing legislation to nullify this issue. The first state that I am aware of to draft this legislation was California in 2002, and it was called "Billy's Bill for Sun Safety" named after Billy Graham who died at the age of 22 from melanoma. Oklahoma became the 11th state overall and the third state in 2018 to pass "SUNucate" legislation to remove this burden. Both the Centers for Disease Control and Prevention and the United States Preventive Services Task Force agree children should be permitted to reduce the risk of skin cancer at school by having access to sunscreen and other sun-protective measures. The American Academy of Dermatology and the American Society of Dermatologic Surgeons are also supporting legislation to educate about the dangers of excess sun exposure state by state. More information may be found at <https://www.asds.net/ASDSA-Advocacy/Advocacy-Activities/Model-Legislation/SUNucate>. The American Medical Association has been working on this public policy issue for many years. It is Resolution 403, A-13 appended: Res

422, A-16 last modified in 2016 for "permitting sunscreen in schools H-440.841." This is not a single specialty issue for Dermatologists. This is not a Republican or Democratic issue. This is a no-brainer issue to protect our children.

We all know that sun-smart behaviors include avoiding artificial sun (tanning beds), avoiding peak sun between the hours of 10 a.m. and 4 p.m. (when children are at school), seeking shade (difficult to do on a playground), wearing sun-protective clothing, wearing a wide-brimmed sun hat, wearing sun glasses, and applying and reapplying sunblock on exposed skin every two hours. After all, getting sunburned – even just once every two years – can triple your risk of melanoma skin cancer, according to Cancer Research UK.

Currently in Arkansas, if your child goes on a field trip, the teacher may reapply sun block every two hours, but is not legally allowed to apply sun block to any of the children unless they have a physician's note giving permission for them to apply the sunblock. This is better illustrated in an article in the Aug. 7, 2017 edition of the *Washington Post*. https://www.washingtonpost.com/national/health-science/many-school-systems-say-kids-need-a-doctors-note-to-use-sunscreen/2017/08/04/19c4a420-72de-11e7-8f39-eeb7d3a2d304_story.html?noredirect=on&utm_term=.cb435253b29b

Hopefully, Arkansas will not be one of the last states to enact legislation to protect our children. Surprisingly, Mississippi Republican Sen. Terry C. Burton already sponsored a bill to permit students to carry and use sunscreen at

school this year. Unfortunately in Mississippi, that bill died in committee for reasons that I cannot find. Arkansas, we are behind Mississippi in this race to protect our children. Legislators interested in protecting our children are working to propose legislation. I sure hope that we are forward thinking and protective enough to not only propose this legislation but also pass it expeditiously. Not only should no child be left behind ... no child should be left to sunburn. AMS



More Than Healthcare, Correct Care Solutions.

WHO WE ARE

CCS is a national public healthcare leader caring for underserved patients in correctional settings, psychiatric hospitals and residential treatment facilities.

..... Opportunities for:

Physician

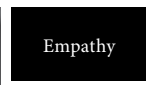
Locations throughout Arkansas

Full-time, part-time and PRN available

Comprehensive Benefits • 401K

Tuition Reimbursement

Competitive Compensation • So Much More...



CALL TODAY OR APPLY ONLINE

Chris Phillips (615) 844-5513 or email **CAPhillips@CorrectCareSolutions.com**

ccs.careers

CCS IS PROUDLY AN EQUAL OPPORTUNITY EMPLOYER



Opioid Reduction Efforts: An Ongoing Battle

Physicians Among Those at Work on the Crisis Here in Arkansas

We could have named this article, “Opioids: The Epidemic of the Century.”

Sadly, it has become that. According to the Centers for Disease Control & Prevention, more than 100 Americans die each day from an overdose of opioid drugs. Prescription medications account for 40% of those deaths. In its prescribing rate for opioids, Arkansas is the second highest in the nation.

By mere association as prescribers, physicians may shoulder more blame than they deserve. This per AMS Executive Vice President David Wroten, who noted that, in truth, the majority of opioid overdoses result from non-prescribed opioids rather than prescription drugs. “The blame game makes for great headlines,” stressed Wroten, in a recent *Democrat-Gazette* article. “The truth is there is more than enough blame to go around.

“Physicians, like everyone else, were caught off guard at the magnitude of the opioid abuse epidemic. However, long before there were headlines, Arkansas physicians began working to address this crisis in our home state. Rather than attacking doctors, let’s look at what doctors have done *right*.”

Indeed, since opioids became a national crisis, the AMS and many member physicians have collaborated with legislators, the Arkansas Department of Health, state drug officials, and other stakeholder groups to reduce opioid use and to reduce associated deaths – with some success. From 2013 to 2017, the number of opioid prescriptions written by physicians and other prescribers decreased by more than 55 million

– a 22% decrease nationally according to IQVIA, a national data research company.

Over the next few months, *The Journal* will bring you more on this topic. We hope to deliver in-depth pieces on cutting-edge research, medication development, educational opportunities, and other efforts being conducted right here at home to confront this epidemic. For now, we hope this brief update increases your knowledge of resources to draw from as you encounter the effects of opioids in your patient populations.

Many of the efforts that are underway in Arkansas sprang from the state’s participation in the **American Medical Association Opioid Task Force**. The Task Force formed in 2014 and works to identify and implement best practices in combatting opioid abuse. Members include 18 national medical associations and eight state medical associations. Although there is work yet to be done, some recommendations from the Task Force are being realized. These include registration and use of prescription drug monitoring programs; greater access to Naloxone, the antidote used to prevent immediate death from overdosing; comprehensive care for patients in pain and with substance use disorders; and targeted education on opioid prescribing. (Find the AMA Opioid Task Force 2018 Progress Report at end-opioid-epidemic.org.)

Prescription Drug Monitoring

Physicians helped pass legislation in 2011 that established the state’s use of the national Prescription Drug Monitoring Program, or PDMP. The PDMP is a database that records what controlled substances are prescribed and dispensed

to patients. By accessing it, physicians and other clinicians can see what medications their patients are taking (and where those were prescribed). Such information is helping physicians avoid drug interaction issues and preventing patients from “doctor shopping” for narcotics.

According to the Task Force, participation in the PDMP is growing rapidly – from 471, 896 nationally in 2014 to more than 1.5 million in 2017. In Arkansas, physicians and other health care professionals in Arkansas increased use of the state PDMP by 61% in 2017.

Of course, some participation has become mandatory. **Act 820 of 2017** requires physicians (or their designated delegates) to check the PDMP every time they write a prescription for a Schedule II or III opioid and every first time they prescribe a benzodiazepine. (Exemptions include PDMP inoperability and prescriptions written for patients under palliative care, hospice care, nursing home residency, and cancer care in some instances.) This legislation also directs state licensing boards to adopt rules limiting Schedule II dosage amounts (keep reading for more on this).

Also of note, the PDMP group at the ADH has started a controlled substance “report card” that goes out quarterly (via email) to all prescribers of opioids – physicians, APRNs, PAs – showing them how they compare to their peers. UAMS Professor of Psychiatry, Medicine and Public Health G. Richard Smith, MD, explained how it works:

“I think everybody that prescribes opioids ought to look at their report,” said Dr. Smith, who is also the medical director of the ADH Drug Mis-

use and Injury Prevention branch that houses the PDMP and chair of the PDMP Advisory Committee. "It compares them to other prescribers who are like them – who practice in the same area of medicine. It gives their prescribing per month and compares them to prescribers in the same area. It gives them information on dangerous combinations and other things like that."

Offering a usage tip, he added, "If you think the report may be wrong, you'll need to track back to the problem. Often, if something is wrong, the physician will have chosen the wrong specialty for their practice. The system can't handle three specialties, for instance. It will only count the first one you enter."

Other provisions of Act 1208: it allows the PDMP to alert a physician if their patient is getting opioids from other prescribers; allows the PDMP to report prescribers to their licensing board if it appears they are prescribing or dispensing in an unsafe manner; calls for mandatory PDMP use by prescribers who are in violation of prescribing laws or regulations; calls for mandatory prescribing education within the first two years of practice; puts in place requirements for

treating patients with chronic pain; and requires all prescribers to adhere to standards at least as strict as those applying to physicians.

NEW State Regulations

The Arkansas State Medical Board recently adopted **Regulation 2.4**, which defines once and for all what is "excessive" and puts in place several regulations prescribers must follow when prescribing narcotics. A critical issue that has drawn some confusion, Wroten touched on this in a June 2018 commentary and again during a Board of Trustees meeting in May:

"There is a lot of misinformation and confusion out there about this issue," Wroten explained as he began to share what he saw and heard at ASMB's meeting related to the topic. "No *physicians* testified against the regulations, but a room full of *patients* testified against it. Most were catastrophic health cases. One poor guy came in who could barely walk and had had a run-in head on with an 18-wheeler about 15

years ago. These people were scared to death that they weren't going to be able to get their pain medications that they had been on for all this time. What they're hearing from their phy-

sicians back home – what they testified – was 'my physician said that with the medical board regulation, he can no longer write opioid prescriptions.'"

To clarify, Regulation 2.4 does **not** prohibit physicians from prescribing pain medications. In sharing what the regulation says to prescribers of narcotics, Wroten explained, "The rule discourages writing over 90, but it doesn't pro-

hibit it. For those writing more than 50 MME per day for chronic pain, this rule establishes a list of things that must be documented in the medical record."

Dr. Smith added more clarification for our readers. "You **can** prescribe what you need to prescribe," he said, "but you need to document that in detail in the chart. If you're going to pre-

> Continued on page 82.



Richard Smith, MD

Medical Board Legal Issues?

Call
Pharmacist/Attorney
Darren O'Quinn
1-800-455-0581

www.DarrenOQuinn.com

The Law Offices Of

DARREN O'QUINN
P.L.L.C.

Little Rock, Arkansas

Aircraft Ownership Simplified

The Family Wants a Vacation Home...

Pay for it
With Your


SKYSHARE[®]
Savings



Call for Details

Aircraft Sales Department
501.975.9328
phil@central.aero

 **CENTRAL**
FLYING SERVICE
Since 1939

2301 Crisp Drive | Little Rock | Arkansas | 72202 | central.aero

scribe those high doses, a) they're dangerous, so b) you need to document the need for it. And if you can reduce your high-dose patients to lower-dose patients, you should do that. Also, the new regulations limit the first prescribing of opioids for acute pain to seven days or less."

In addition, Regulation 2.4 requires one hour of CME on prescribing narcotics each year as part of the already required 20 hours (not in addition to). Read the rule in its entirety at ar-medicalboard.org.

Mandated Emergency Room Guidelines

Arkansas, working with the ADH and other organizations, created Emergency Room prescribing guidelines to help reduce prescribing of opioid pain medications in hospital emergency departments. In 2015, the Society drafted legislation requiring hospitals in Arkansas to adopt these or similar guidelines.**

Currently, the AMS is not aware of how well these guidelines are being adhered to. We hope to follow up on this in a future issue.

Naloxone

Nearly all 50 states have enacted improved naloxone access laws – another recommendation by the Task Force and supported by the Arkansas Office of the State Drug Director. According to the Task Force's 2018 Progress Report, "Between January 2018 and April 2018, naloxone prescriptions dispensed reached a record high in the United States, increasing to more than 11,600 naloxone prescriptions."

This was made easier by legislation supported by Arkansas physicians (Act 284 of 2017) that makes it easier for physicians and pharmacists to dispense naloxone to patients or caregivers without a prescription.

"The Office of State Drug Director is trying to equip all the first responders with Naloxone, which short-term reduces opioid overdose. And certainly, these doctors who are prescribing these high doses of medicine need to ask their patients to get naloxone, which they can get even without a prescription or their doctors can write the prescription. This is so they can have it, not for self-administration, but in case they need to administer it in their home," said Dr. Smith.

The Addiction Treatment Front

A former Arkansas representative and an AMS past president, Gene Shelby, MD, is an expert on opioids and opioid addiction treatment. With his wife Faridah Katkhordeh, he runs a Suboxone®-assisted (buprenorphine) opioid treatment facility in Hot Springs and represents Arkansas and AMS as a member of the AMA Task Force. Dr. Shelby has seen his treatments save lives and has also seen them misunderstood by others who are on the same side of the fight. In the August 2016 issue of *The Journal*, Dr. Shelby and one of his patients described in detail the workings of his treatment methods. He also shared his hope that physicians will endeavor to understand the risks opioids pose to some patients, learn all they can about outpatient treatments for dependence, and consider treating patients as he has. "Doctors need to know about this treatment," he stressed. "They may well encounter a patient that is taking Suboxone®, and they'll need to know a little bit about how it works and its interactions."



Michael Mancino, MD

Dr. Shelby has not seen evidence of increased treatment options with buprenorphine for people with opiate dependence in Arkansas. He shared news of an editorial in July 5, 2018, the *New England Journal of Medicine* that urges primary care practices to offer buprenorphine treatment. As for the state's response, Dr. Shelby said, "Arkansas rejected this model and instead is focusing on centering treatment on regional mental health centers. Unfortunately, many of these don't have physicians who prescribe buprenorphine. And these centers don't coordinate well with primary care practices. Also, many in our state government believe the myth that buprenorphine treatment is simply replacing one drug for another and not a real treatment for addiction."

Dr. Shelby doesn't agree with the idea he described as "myth" and instead adopts the view of the aforementioned *New England Journal* article, which states, "If relying on a daily medication to maintain health were addiction, then most patients with chronic conditions such as diabetes or asthma would be considered addicted." He shared an audio interview with more information.***

Help for Physicians Providing Medication-Assisted Treatment

There is *some* help for primary care practices who decide to provide medication-assisted treat-

ment, or MAT. Under the leadership of Michael Mancino, MD, the UAMS Center for Addiction Services and Treatment provides evidence-based medication-assisted treatment to Arkansans with Opioid Use Disorders (OUD) in the form of methadone, Suboxone®, or naltrexone.

In addition, to help rural doctors with their MAT questions, UAMS has partnered with the DHS to provide a free one-on-one consultation service for health care providers treating patients with OUD. The project, known as **MATRIARC (Medication-Assisted Treatment Recovery Initiative for Arkansas Rural Communities)**, provides a hotline that providers can call for advice on related topics ranging from the provision of medication-assisted treatment to insurance issues. An addiction expert is also available for telemedicine consultations. For information, call 501-526-8459 (toll-free 1-833-872-7404).

"These are resources for physicians in rural areas to assist with complicated cases of patients with chronic pain and how to have the difficult discussion around the potential that there may be an opiate addiction in the patient," said Dr. Mancino. "Getting trained to provide medication-assisted treatment for opioid use disorder with buprenorphine will allow physicians to have an option to continue to provide care for a patient that is in their practice that they identify as having an opioid-use disorder. With support from the Division of Behavioral Health Services (DHS), they will have several resources to assist them in providing this life-saving medication treatment and not feel that they are doing this all alone."

AR-Impact

CME is also being provided through UAMS's new interactive training service known as **AR-IMPACT (Improving Multi-Disciplinary Pain Care Treatment)**, a weekly interactive tele-video consultation service designed to help clinicians better manage their chronic pain patients by seeking to look at multiple ways to improve pain treatment and avoid opioids if possible. This free resource features seminars on different topics delivered via tele-video conference and therefore accessible to providers around the state. It takes place each Wednesday from 12 to 1 p.m.; however, there is a website with instructions and most seminars are also available online to allow users to complete them on their own time.

Each program starts with a brief presentation about an aspect of care of these patients fol-

lowed by a case conference where doctors can present their difficult cases for discussion with their peers and with a panel of subspecialists in addiction management, psychology, physical therapy, and clinical pharmacy.

“The majority of physicians have never had a lecture on improving pain management,” said Dr. Smith, “AR-IMPACT is ongoing and it’s free. You could get all your continuing education for an entire year from it if you wanted to in 20 sessions. Arkansas Blue Cross Blue Shield is paying for this for the first two years, with help from the Office of State Drug Director. Prescribers should take advantage of it. If you’re worried about your opioid prescribing, this is a way to help yourself.”

More New Training Through Uams

As aforementioned, Act 1208 requires mandatory prescribing education within the first two years of practice. To help prescribers fulfill this requirement, UAMS has developed a free, online three-session course on appropriate prescribing. The modules are available as of August 27, 2018. For additional information or to register, visit uams.cloud-cme.com and

select Online Courses. You may contact the Office of Continuing Education at 501-661-7962 if you have questions or problems accessing course materials.

More Work to Be Done

Since the Task Force’s recommendation for more comprehensive care, more than 50,000 physicians (nationally) have become certified to provide in-office buprenorphine for treatment of opioid use disorder – a 42.2% increase.

Recent Task Force reports share that in 2017, more than 549,700 physicians and other providers nationwide completed continuing medical education related to opioid prescribing, pain management, screening for substance use disorders, and related areas. The same report, however, states that “to help ensure patients receive care, health insurance companies, Medicaid, and other payers must now remove administrative barriers, such as prior authorization for medication assisted treatment (MAT).”

These and many other barriers mean that there is still much work to do, and much more to talk about from so many perspectives. “I don’t

think you can write too much about this in the next few years,” said Dr. Smith. “The governor is committed to it, and it’s a national public health emergency, so we’ve got to get some traction.”

Make no mistake. The AMS is among those highly committed to the cause. Continue reading *The Journal* in the coming months as we cover certain facets in more depth. Meanwhile, for answers to your questions related to the efforts presented here, call AMS at (501) 224-8967.

*CDC Guidelines for Prescribing Opioids for Chronic Pain (supported by AMA and AMS): <https://www.cdc.gov/drugoverdose/prescribing/guideline.html>

**Arkansas Emergency Department Opioid Prescribing Guidelines: <https://www.arkmed.org/resources/prescription-monitoring/>

***Primary Care and the Opioid-Overdose Crisis — Buprenorphine Myths and Realities

An audio Interview with Dr. Brendan Saloner on increasing access to medication for treatment of opioid use disorder.

Listen at <https://www.nejm.org/doi/full/10.1056/NEJMp1802741> AMS

SAVE THE DATE

Table Rock Regional Roundup

A Regional Ophthalmology Conference

September 27-29

Big Cedar Lodge | Ridgedale, Mo.
www.tablerockroundup.org

Arkansas Urologic Society Annual Meeting

October 12-13

Hilton Garden Inn | Little Rock
Contact Kay Waldo, kwaldo@arkmed.org

Annual AMS Insurance Conference

October 2 & 3

Little Rock Wyndham Hotel

October 11

Fayetteville, Hilton Garden Inn

October 18

Jonesboro, ASU Convocation Center

Arkansas PCPs are Improving Healthcare



Congratulations! We are proud to recognize these medical providers for their outstanding performance in the QualChoice 2017 Comprehensive Primary Care Plus program. Thank you for helping improve healthcare for our members.



QualChoice.com | 800.235.7111

1808 CR 008 08/2018

Batesville Family Care (Batesville)
Unity Health Red River Family Medicine (Clinton)
SAMA Healthcare Services (El Dorado)
Kumar’s Medical Clinic, PA (Forrest City)
Cornerstone Medical Clinic (Harrison)
Doctor’s Health Group (Jonesboro)
St. Bernards Clopton Clinic (Jonesboro)
Arkansas Primary Care Clinic (Little Rock)
CHI St. Vincent Primary Care – Midtowne (Little Rock)
Little Rock Family Practice Clinic – Central (Little Rock)
Little Rock Family Practice Clinic – West (Little Rock)
Dr. John Alexander, Jr. (Magnolia)
Dr. Andy’s Family Practice Clinic (Mountain View)
Baptist Health Family Clinic – Lakewood (NLR)
North Hills Family Center (NLR)
UAMS Family Medical Center Southwest (Texarkana)
Baptist Health Family Clinic (White Hall)
Dr. Mark Ramiro (White Hall)

Receiving Children with Autism into Primary Care

MAYA LOPEZ, MD; JILL FUSSELL, MD; ANGELA SCOTT, MD; and CHAD RODGERS, MD, FAAP

GD, a 28-month-old healthy boy, returns for follow-up after being seen by the developmental specialist. Mother states, "Doctor, they said GD has autism. I just don't know. I've always fed him healthy things — no preservatives." She seems distressed and confused. "He's smart in his own way. Do you think he can go to college? Will he be able to live on his own?"

Parents often face an unexpected and radical change in their lives when their child is diagnosed with a developmental disability. Parents may be experiencing different emotions, including guilt and grief over their child's condition, relief that a diagnosis has been made and worry about their child's future.

As GD's primary care physician (PCP), your role includes: reviewing evaluation results with parents in a culturally sensitive way, providing timely referral to services while serving as the child's medical home, supporting family and coordinating care.¹ To be effective and understand what the family needs, PCPs need to assess how the family is adjusting at every encounter.

GD's mom is obviously going through many emotions at this point. We can

imagine the tug-of-war that is raging in her mind. Is this diagnosis real? Is this my fault? What's my child's future?

Concrete answers to these questions may not be what is most useful to the family at this time. Parents need a helping hand to rebuild the vision they have for their family, one that is founded on an understanding of normal development and a vision of a hopeful future for their child.

Interviews conducted with parents of children with disability indicate that the majority recognize the need for a strong belief in their child and their child's future, an optimistic outlook, and a realistic view and acceptance of the disability.² To help parents understand appropriate developmental expectations for their child, give them developmental charts, such as those found at no cost on the Centers for Disease Control and Prevention's *Learn the Signs. Act Early* website ([cdc.gov/ncbddd/actearly/index.html](https://www.cdc.gov/ncbddd/actearly/index.html)). They are available in printed format or accessed as Milestone Tracker Mobile App, downloadable on iOS and Android devices.

Provide concrete information on interventions that have optimized developmental potential and independence in children with similar

needs. Knowing about specific recommendations and action steps can help families appropriately channel their desire to "do whatever it takes" to help their child. Creating this plan together can solidify the relationship with the PCP as the family's ally on their journey.

Parents derive more benefit from meeting and interacting with other parents whose journey is similar to theirs, compared to typical supports (e.g., social worker, doctor's office). The impact of parent-to-parent connections is described as multidimensional: parents realize they are not alone, they can talk to someone who understands and can get a glimpse of a possible future for their child. Eventually, parents feel able to help other parents and this decreases their own need for support.³

Encourage families under your care to contact the Arkansas Autism Resource and Outreach Center ([aaroc.org](https://www.aaroc.org) or 1-800-342-2923) to connect with other families and with community resources. AAROC is a family-led, statewide charitable organization providing parent-to-parent support, advocacy, education and training for families of children with autism spectrum disorder (ASD).

Mother states, “GD needs speech language therapy and an OT eval for sensory issues. They said GD should be exposed to other kids. Is his Head Start program enough? Where can he go?”

The geographic distribution of developmental intervention services across Arkansas is uneven. Familiarize yourself with local programs so you can advise the parents about which programs would best help their child, according to age and level of developmental support needed. To find local services, visit the Arkansas Better Beginnings website (arbetterbeginnings.com). Look for the Find Child Care button at the bottom of the page for a searchable database of all licensed early child-care and education programs. The database can compile a list of child care programs by location or age range each program serves.

Numerous community child care centers and preschools provide structured settings for children needing **typical opportunities**.

Programs for children considered to be **educationally at risk** (due to factors such as significant poverty, history of abuse or caregivers with limited educational attainment) provide environmental stimulation and family support. They include:

- Head Start provides environmental stimulation in a classroom setting plus family support — Head Start (ages 3-4 yrs.); Early Head Start (pregnancy-age 3 yrs.); and Migrant/Seasonal Head Start (ages 0-5 yrs.) (arheadstart.org)
- ABC for School Success (humanservices.arkansas.gov/about-dhs/dcece/programs-services/Arkansas-better-chance-program) provides a classroom setting and home visiting

- AR Home Visiting programs are home-based and target family education (arhomevisiting.org). These programs include: Following Baby Back Home, Healthy Families America, HIPPY Arkansas, Parents as Teachers, Nurse-Family Partnership and SafeCare Arkansas

Programs for children with **significant developmental needs** include:

- Outpatient private providers offering direct therapy
- Early Intervention Day Treatment (EIDT) is a structured setting with direct therapy for 0-5 yrs., plus school-age children during summers, focusing on children with severe or complex developmental needs, or significant medical or nursing needs
- First Connections (0-age 2) offers family-centered services in home and community settings (arkansas.gov/dds/firstconnectionsweb/#fc-home)
- Local school cooperatives (ages 3-5 yrs.) provide direct therapy in a school or community setting

Given that GD has autism, he may benefit from educational supports (structured preschool experience), direct therapy (speech language and possibly occupational therapy) and opportunities to socially interact with peers. GD may also need evidence-based interventions for autism that include several techniques from the field of Applied Behavioral Analysis. These techniques can be implemented in group-care settings or used within therapy sessions. The May Institute’s National Autism Center maintains an updated menu of Evidence-

Based Practices for children with ASD called the National Standards Project, downloadable at nationalautismcenter.org.

After discussing all these options with GD’s parents, you decide together to keep him in Head Start where he has a good relationship with staff and is making progress. You initiate a referral to First Connections for occupational and speech-language therapy within the Head Start setting. Facilitate an application to the Arkansas Autism Partnership Waiver program (uofapartners.uark.edu/projects/autism-partnership/) for intensive autism services in the home and community. Schedule a follow-up visit in several weeks and encourage the family to contact AAROC for additional support in the meantime. ▲

Drs. Lopez, Fussell and Scott are faculty in the Section of Developmental-Behavioral Pediatrics at UAMS; Dr. Rodgers is a practicing pediatrician and AFMC’s chief medical officer.

REFERENCES

1. Council on Children With Disabilities, et al. Identifying Infants and Young Children With Developmental Disorders in the Medical Home: An Algorithm for Developmental Surveillance and Screening. *Pediatrics* 2006;118(1):405-420.
2. Heiman, T. Parents of Children with Disabilities: Resilience, Coping and Future Expectations. *Journal of Development and Physical Disabilities* 2002; 14(2):159-171.
3. Kerr, SM. and McIntosh, JB. Coping when a child has a disability: exploring the impact of parent-to-parent support. *Child: Health, Care and Development* 2000; 26(4):309-322.

AFMC WORKS COLLABORATIVELY WITH PROVIDERS, COMMUNITY GROUPS AND OTHER STAKEHOLDERS TO PROMOTE THE QUALITY OF CARE IN ARKANSAS THROUGH EDUCATION AND EVALUATION. FOR MORE INFORMATION ABOUT AFMC QUALITY IMPROVEMENT PROJECTS, CALL 1-877-375-5700 OR VISIT AFMC.ORG.

OCTOBER 2018

Deprescribing Antidepressants: *An overview with practical clinical scenarios*

Gaurav Jain, MD¹; Sarita Singhal, MD²; Aman Mahajan, MD, MRCPsych³; Abhijit Ramanujam, MD⁴; Shashank Kraleti, MD,FAAFP⁵; Sunil Kumar, MD⁶; Sumit Fogla, MD, FAAFP, MBA⁷

¹Berkshire Medical Center, Pittsfield, MA; ²Baystate Medical Center, Springfield, MA; ³Rogers Memorial Hospital, Brown Deer, WI;

⁴Woodland Medical Center, Sacramento, CA; ⁵UAMS, Little Rock, AR; ⁶Neshoba County Hospital, Philadelphia, MS; ⁷Beaumont Hospital, Grosse Pointe, MI

Abstract

Antidepressants are used for a variety of indications and are among the most widely prescribed of all medications. Although concerns have been raised about the side effect profile and tolerability of the older antidepressants such as the tricyclic antidepressants (TCAs) and the Monoamine Oxidase Inhibitors (MAOIs), Selective Serotonin Reuptake Inhibitors (SSRIs) and other relatively newer antidepressants such as venlafaxine, mirtazapine, bupropion, and duloxetine are considered better tolerated and safer. As a result, prescriptions of these medications often do not undergo a periodic risk-benefit analysis. Although there is extensive literature supporting the use of antidepressants and their combinations for a variety of indications, there is insufficient literature on the chronic side-effects. Further, the duration for which combinations or even monotherapy need to be continued, has not been established. Additionally, if a clinical situation warrants the discontinuation of an antidepressant, the guidelines for how to do so and for the management of withdrawal syndromes are very sparse. This paper reviews the existing literature on chronic side effects of antidepressants and the various withdrawal syndromes and their management. We also present five clinical situations with a risk-benefit analysis of continuing antidepressant in each case and subsequent management.

Introduction

Eleven percent of Americans 12 years and older take antidepressant medication, as reported by the National Health and Nutrition Examination Surveys (2005–2008).¹ The same survey found that more than 60% of Americans taking antidepressant medication had been taking it for two years or longer, with 14% having medication for 10 years or more.¹ Antidepressants were the third most common prescription drug taken by Americans of all ages in 2005–2008 and were most frequently used

by men and women between 18 and 44 years.² From 1988–1994 through 2005–2008, the rate of antidepressant use in the United States among all ages increased nearly 400%.² Further, only a minority of patients who were taking antidepressants were evaluated by a psychiatrist or psychologist during the course of one year, and a declining percentage underwent psychotherapy.³

Decision-making Around Antidepressant Continuation

The majority of antidepressants are taken to treat depression and anxiety disorders. The goals of antidepressant therapy are twofold: to reduce and eliminate the acute symptoms, as well as to achieve and maintain full remission. A patient may want to stop antidepressants due to several reasons such as improvement in depressive symptoms, poor or no response to the prescribed antidepressant, intolerable side effects, planned or unplanned pregnancy or even an unwillingness to take pills. Often, if a patient is doing well on antidepressants and not complaining of too many side effects, many physicians renew the prescription indefinitely without regular monitoring of efficacy and tolerability due to moderate quality data that it protects against a relapse of depression or recurrence/worsening of anxiety in long term. Current recommendations suggest that treatment should continue for up to nine months after depressive symptoms have remitted to prevent relapse and for longer than nine months to help prevent a recurrence.^{4,5} However, in making the decision to stop an antidepressant a number of factors need to be considered. These include factors that increase the risk of recurrence of a depressive episode: three or more previous episodes of major depression, long previous episodes, previous severe episodes especially associated with suicidality or psychotic features, high prior frequency of recurrence, an episode in the previous 12 months, residual symptoms during continuation treatment, and relapse after previous drug discontinuation.⁶ For treatment of depression in children and adolescents, the practice parameters recommend continuation therapy for 6-12 months

after patient becomes asymptomatic, with maintenance treatment depending on the clinician and discontinuation tried during summer so that if there is any relapse it is less disruptive to school function.⁷ In addition, one needs to be aware that the discon-

Table 1. Proposed diagnostic criteria for SRI discontinuation syndrome
(Adapted from Black et al and Berber M.J)^{39,40}

1. Appearance within one to seven days after discontinuation or significant reduction of dose
2. Occurrence after at least one month of exposure to antidepressant
3. Duration of generally <3 weeks after abrupt discontinuation or dose reduction
4. Two or more of the following symptoms (FINISH Mnemonic)
Flu-like symptoms
Fatigue
Lethargy
General malaise
Muscle aches/headaches
Diarrhea
Insomnia
Nausea
Imbalance
Gait instability
Dizziness/lightheadedness
Vertigo
Sensory disturbances
Paresthesia
“Electric shock” sensations
Visual disturbance
Hyperarousal
Anxiety
Agitation

tinuation may accelerate the symptoms of other disorders. However, there are no treatment studies in youth, so information about which patient requires maintenance or continuation treatment is limited.⁷

In a real world experience, Bockting et al. examined the discontinuation rate of maintenance antidepressants in daily clinical practice in recurrently depressed patients and the associated risk of recurrence.⁸ Prospectively, antidepressant maintenance medication and recurrence were examined in 172 euthymic patients with recurrent depression. Patient profiles before recurrence (nonusers, intermittent users, continuous users) were examined and related to recurrence over a two-year follow-up period. They found that despite continuous use of antidepressant in 42% of their study population, 60.4% of them relapsed within two years. This relapse rate was comparable to the rate of the intermittent users (63.6%). On the other hand, in patients who stopped taking antidepressant after remission and who received additional preventive cognitive behavior therapy (CBT), the recurrence rates were significantly lower than in non-antidepressant-using patients treated with usual care (8 vs. 46%). Fava and colleagues conducted studies^{7,8} of maintenance CBT following

pharmacotherapy discontinuation and found that patients who received CBT had lower levels of residual symptoms⁹ or lower relapse rates¹⁰ compared with those who did not receive CBT. Guidi et al, reported a meta-analysis on the efficacy of the use of pharmacotherapy in the acute phase and of psychotherapy in its residual phase, in reducing the risk of relapse in major depressive disorder.¹¹ Thirteen high-quality studies with 728 patients in a sequential treatment arm and 682 in a control treatment arm were included. Patients randomly assigned to CBT who had antidepressants tapered and discontinued were significantly less likely to experience relapse/recurrence compared with those assigned to either clinical management or continuation of antidepressant medication (number needed to treat=5). Possibly, sequential integration of CBT and pharmacotherapy is a viable strategy for preventing relapse in major depressive disorder as well as the maintenance CBT offers a non-pharmacotherapeutic alternative to the long-term use of antidepressants.¹¹ Similarly, the guidelines on treatment of the anxiety disorder recommends that successful medication treatment be continued for 6 to 12 months for relapse-prevention before considering a gradual taper except a longer period of 1–2 years for the obsessive compulsive

disorder.^{12,13} When deciding to stop the antidepressant therapy, similar basic principles and factors of increased risk of relapse or recurrence should be considered for this patient group as discussed for major depression and maintenance CBT shall be considered alternatively.^{12,13}

Similarly, in children and adolescents, the first approach for mild depression would be family education, support, counseling, case management and problem solving.¹⁴⁻¹⁶ For moderate or severe depression, SSRI, CBT and IPT is indicated. There are no empirical studies in adolescents to guide clinicians of patients who have failed to respond to an SSRI, though clinical guidelines are based upon expert clinical consensus exist.^{17,18}

The adverse effects of antidepressants are a common reason to stop therapy both early and late in the course of treatment.^{19,20} Moreover, the side effects that patients have put up with initially, like sexual side effects (decreased desire and difficulty having an orgasm), insomnia, drowsiness, vivid dreaming, headache, nausea, or just not feeling like yourself (or emotionally flat), can become less acceptable over time, especially if one no longer

> Continued on page 88.

Table 2. Discontinuation of common antidepressants: clinical presentation and management

Antidepressant class	Mechanism of discontinuation symptoms	Common symptoms	Specific antidepressants	Dosage range in milligrams/day and [Half-life in hours]	Recommended taper rate
MAOI's	Excessive release of dopamine and norepinephrine (resembles amphetamine withdrawal)	Cognitive impairment, aggression, catatonia, insomnia, irritability, paranoid delusions, depressed mood, hallucination	Phenelzine	15-90 [1.2]	10 mg/d every 2 weeks or 10% weekly
			Tranylcypromine	30-60 [1.5-3]	15 mg/d every 2 weeks or 10% weekly
TCA	Cholinergic rebound	Abdominal pain, anorexia, nausea, vomiting, diarrhea, chills, fatigue, weakness	Amitriptyline Clomipramine Doxepin Imipramine Nortriptyline	25 to 300 [9-25] 25 to 250 [22-84] 25 to 300 [11-23] 25 to 300 [10-16] 25 to 150 [18-35]	Gradually over 3 months
SSRI	Reduced synaptic serotonin concentration in the presence of 5HT receptor downregulation	Dizziness, gastrointestinal symptoms, sleep disorders, electric shock-like sensations, flashes	Citalopram Escitalopram Fluoxetine Paroxetine Paroxetine CR Sertraline	10-60 [35] 10-30 [27-32] 20-80 [84-144] 10-60 [21] 12.5 to 62.5 [15-20] 50-200 [26]	10 to 20% of dose every week over 4-8 weeks period except fluoxetine, which may not need taper. Slower taper especially with shorter half-life medication.
SNRI	As SSRI and additional down regulation of the adrenergic receptor	Flu-like syndrome, muscle pain, nausea, dizziness, headache, tachycardia, tinnitus, akathisia, rebound anxiety	Duloxetine Mirtazapine Venlafaxine Venlafaxine XR	30-120 [11-16] 15-45 [20-40] 75-450 [3-13] 75-450 [3-13]	
Atypical		Irritability especially with bupropion. Combination of SSRI and SNRI	Bupropion Trazodone	75-450 [12-30] 50-400 [7]	

MAOI: Monoamine oxidase inhibitor; TCA: Tricyclic antidepressants; SSRI: Selective serotonin reuptake inhibitors; SNRI: Selective serotonin and norepinephrine reuptake inhibitors.

Table 3. Steps to deprescribing of the antidepressant therapy.

BEFORE: Make an informed decision; discuss the options and alternatives; be aware of possible withdrawal symptoms or return of depression; consider starting psychotherapy; if involved in psychotherapy, discuss well in advance of the final session; make a plan; choose a good time; decide the speed of reduction; establish a contact person in the event of problems; seek support from friends and family; make arrangement at work place as one may need time off; avoid recreational substances, including alcohol.

DURING: Reduce slowly; closely supervise and evaluate frequently to observe for symptom return or exacerbation; be prepared to stop the reduction or increase dose again if needed; keep a diary of symptoms and drug doses.

AFTER: Continue to monitor symptoms; realize it may take some time before things fully stabilize; keep active; continue (CBT)/relaxation techniques if you have been taught these; do not hesitate to see your doctor.

“needs the pills.” Although more concerning in the elderly and ailing population, the selective serotonergic reuptake inhibitors (SSRI) use is associated with an increased risk of hyponatremia in the elderly, with studies showing an increased risk ranging from 0.5 to 32%.²¹ Also in the same population, antidepressant use is associated with an increased risk of falling and bone fractures in the elderly²² and probably SSRIs associated lower bone mineral density.²³ The data from three prospective epidemiological studies have found that, even after controlling for depressive symptoms, antidepressant use is associated with an increased risk of death in the elderly.^{24–26} The tricyclic antidepressants (TCAs) are usually associated with an increase in cardiac events, mainly due to anticholinergic properties and norepinephrine reuptake blockade.²⁷ However, studies on SSRIs effect on cardiovascular system have produced mixed results. In addition, in treatment of depression in children and adolescents, there is lack of clear evidence of SSRI's being beneficial, with only two antidepressants, Fluoxetine and escitalopram approved by FDA for treatment of depression in children and adolescents. A meta-analysis by FDA found a higher rate of suicide related spontaneously reported adverse events with SSRI's (4% vs 2%) and associated with few suicide attempts, no completion and occurring early in treatment and at the same time some evidence of prescribing outweighing the risks, it is important to use it judiciously and be aware of the side effects and prescribe for limited period of time.²⁸ This raises the question of how long to prescribe to avoid long-

term side effects and whether or not to use non-pharmacological interventions for depression. As there are no clear guidelines on prescribing for how long and little is known about the effects, it would be wise to use it for a limited time period.

As such, the decision on how long to stay on antidepressant therapy does not have a straightforward answer and should involve a thoughtful discussion on the pros and cons of the therapy between the patient and the provider.

How to Taper and Discontinue Antidepressants

Once a decision is made to stop antidepressant therapy, steps should be taken to minimize or avoid the discontinuation symptoms that can occur if such medications are withdrawn too quickly. The term *discontinuation symptoms* is used to describe symptoms experienced on stopping prescribed drugs that are not drugs of dependence and is explained in the context of ‘receptor rebound’.^{29,30} It has been hypothesized that antidepressants work by altering the levels of monoamine neurotransmitters in the forebrain.³¹ As antidepressant therapy continues, neurons adapt to the changes in the level of neurotransmitters and rapid discontinuation of antidepressants leads to monoamine imbalances, causing symptoms that could range from mild to severely distressing. Usually an interruption of antidepressant therapy for five to eight days, or after missed doses of antidepressants with short half-lives, are associated with the emergence of new somatic and psychological symptoms.^{32,33} These can be broadly divided into six categories: affective (e.g. anxiety, irritability, depressed mood, or suicidal thoughts); gastrointestinal (e.g. nausea, stomach upset); neuromotor (e.g. ataxia, headaches); vasomotor (e.g. diaphoresis, dizziness); neurosensory (e.g. paraesthesia, electric shocks, or head zaps); and other neurological (e.g. vivid dreams, insomnia, or fatigue).³⁰ Discontinuation symptoms are experienced by at least a third of patients^{34–37} and are seen to some extent with all antidepressants.³⁸ Discontinuation syndrome is generally not medically dangerous but may be uncomfortable. Symptoms can vary in form and intensity and occur in any combination. They are usually mild and self-limiting, but can occasionally be severe and prolonged. The absence of forewarnings may negatively affect the perception of symptom severity. Table 1 describes proposed diagnostic criteria for the selective serotonin inhibitor discontinuation syndrome.^{39,40} Symptoms vary according to the class of antidepressant (see Table 2) and can be quantified using the discontinuation–emergent signs and symptoms (DESS) scale 35.

Based on the nature of symptoms and time course of the emergence of the symptoms, one

should be sure to differentiate antidepressant discontinuation syndrome from relapse of depression and other psychiatric and medical conditions, to avoid unnecessary investigations or reintroduction of the antidepressant.⁴¹ Some studies have reported that half lives of sertraline, citalopram, paroxetine and bupropion are much shorter in adolescents than in adults. Therefore, one should be alert to the possibility of withdrawal side effects when these medications are being prescribed once daily.⁴²

When an antidepressant is being discontinued, it is best to taper the medication over the course of at least several weeks. Although anyone can experience discontinuation symptoms, the risk is increased in those prescribed short half-life drugs (e.g. paroxetine, venlafaxine) and higher speed of taper or abrupt cessation.^{32,35} The risk is also increased in those who have been taking antidepressants for eight weeks or longer,²⁴ those who have developed anxiety symptoms at the start of antidepressant therapy (particularly with SSRIs), children and adolescents, those receiving other centrally acting medication (e.g. antihypertensives, antihistamines, antipsychotics), and those who have experienced discontinuation symptoms before. At-risk patients may need a slower taper or a temporary change to a longer half-life antidepressant. For patients receiving psychotherapy, it is recommended to discuss the issue of treatment discontinuation well in advance of the final session. Table 2 provides taper recommendations to decrease the risk of discontinuation syndrome. The end of the taper may need to be slower, as symptoms may not appear until the reduction in the total daily dosage of the antidepressant is substantial. Patients receiving MAOIs may need to be tapered over a longer period. The treatment of the discontinuation syndrome is pragmatic. For mild symptoms, reassure the patient that they will pass in a few days. For severe symptoms, reintroduce the original antidepressant (or another with a longer half-life from the same class) and taper gradually while monitoring for symptoms. Some evidence supports the use of anticholinergic agents in tricyclic withdrawal and fluoxetine for symptoms associated with stopping SSRI, clomipramine or venlafaxine.⁴³

As the antidepressant therapy generally continues for months to years, so should the taper be given adequate time to take effect. Several months may be required depending on the clinical and patient related factors, dose and pharmacologic profile of the drug, duration of treatment, and response of the patient during the taper period. It is currently inconclusive whether the development of discontinuation symptoms has a genetic component. However, a recent clinical study indicated a possible

> Continued on page 90.

Arkansas' **FIRST & ONLY** Certified Comprehensive Stroke Center

As a certified* stroke center, UAMS Medical Center ranks among the top stroke centers in the country. This means UAMS has a dedicated team of stroke specialists to handle the most complex stroke cases, including resources such as:

- 24/7 care for patients with stroke and any cerebrovascular disorder
- an emergency department with a dedicated stroke program and an available stroke team
- on-site coverage by a neurospecialist
- endovascular procedures and post-procedural care 24/7
- dedicated neurointensive care unit beds for complex stroke patients 24/7
- neurosurgical services available 24/7
- on-site coverage for NICU by neurospecialist

UAMS offers your patients quick, comprehensive care – providing a greater chance of not only surviving, but leaving here in the best health possible.



UAMShealth.com/stroke

UAMS
For a Better State of Health

*The Joint Commission is an independent, not-for-profit organization that evaluates and accredits more than 20,000 health care organizations and programs in the U.S.

Table 4: Clinical Scenarios

Clinical Scenario	Clinical Indicators of Risk	Antidepressant Continuation		Antidepressant Discontinuation		Recommendations
		Risks	Benefits	Risks	Benefits	
25-year-old man who has taken escitalopram for six years, minimal depressive or anxiety sx for past three years, last suicide attempt four years ago, living in own apartment shared with roommate, no medical comorbidity, occasionally smokes marijuana, wants to D/C Lexapro.	History of suicide attempt Occasional drug use Antidepressant started at young age and taken for six years	Side effects	Decrease risk of recurrence			Slow taper under supervision Stop marijuana use Start psychotherapy
34-year-old woman on venlafaxine who is planning on becoming pregnant, three past depressive episodes (last one severe, one year ago), one suicide attempt in last episode by overdosing on Benadryl (10 tabs), medically healthy, wants to know what to do.	Three past depressive episodes Last episode was severe History of suicide attempt	Side effects Potential teratogenicity Neonatal antidepressant discontinuation	Decrease risk of recurrence			Slowly taper to lowest required dose under supervision Start psychotherapy Close monitoring of the fetus
78-year-old woman who lives with her family, ambulates on a scooter due to osteoarthritis, has COPD, on many medications, was given remeron seven years ago, which was augmented with abilify 10mg three years ago and has been on the combination for three years.	Physical disability Multiple medical comorbidities	Side effects Drug-drug interaction	Decrease in symptom intensity Decrease risk of recurrence			Start with slow taper of augmenting agent. Watch for few months before recommending slow taper of the antidepressant under supervision Start psychotherapy
37-year-old man with bipolar depression, alcohol use disorder, lithium 1500mg a day (level 1.00mEq / L), amitriptyline 100mg HS, continues to drink and have mild depressive symptoms.	Alcohol use disorder Bipolar rather than unipolar depression	Side effects Interaction with alcohol use Potential of antidepressant induced mania	Decrease in symptom intensity			Stop alcohol use Start psychotherapy for deaddiction and mood disorder Slow taper under supervision
40-year-old woman with recurrent depression, currently moderate episode, in the past has responded partially to sertraline 100mg, insists that she does not want to take AD anymore and wants to discuss alternate strategies.	Multiple past episodes	Side effects	Worsening of symptoms			Start psychotherapy Psychoeducation in regards to continuation and address issues with current antidepressant Suggest alternative antidepressant

involvement of the C(-1019)G polymorphism of the serotonin 5-HT1A receptor gene in the occurrence of paroxetine discontinuation syndrome.⁴⁴ Table 3 summarizes main steps in the process of de-escalation of the antidepressant therapy.

References:

- Multum Lexicon database. In: National Health and Nutrition Examination Survey—1988–2008 data documentation, codebook, and frequencies. 2010.
- National Center for Health Statistics. Health, United States, 2010: With special feature on death and dying. Table 95. Hyattsville, MD. 2011.
- Olfson M, Marcus SC. National patterns in antidepressant medication treatment. Arch Gen Psychiatry 66(8):848–56. 2009.
- American Psychiatric Association Work Group on Major Depressive Disorder: Practice guideline for the treatment of patients with major depressive disorder, 3rd ed. Washington, DC, American Psychiatric Association Publishing, 2010.
- Ballenger JC, Clinical guidelines for establishing remission in patients with depression and anxiety. J Clin Psychiatry 1999;60 (suppl 22):29-34.
- Timonen M, Liukkonen T. Management of depression in adults. BMJ. 2008 Feb 23;336(7641):435-9.
- Birmaher B, Brent D et al. Practice parameter for the assessment and treatment of children and adolescents with depressive disorders. Journal of American Academy of Child and Adolescent Psychiatry, 46:11, November 2007.
- Bockting, C. L. H., ten Doesschate, M. C., Spijker, J., Spinhoven, P., Koeter, M. W. J., and Schene, A. H. (2008). Continuation and maintenance use of antidepressants in recurrent depression. Psychother. Psychosom. 77, 17–26.
- Fava GA, Rafanelli C, and Grandi S. et al. Prevention of recurrent depression with cognitive behavioral therapy. Arch Gen Psychiatry. 1998 55:816–820.
- Fava GA, Ruini S, and Rafanelli C. et al. Six-year outcome of cognitive behavior therapy for prevention of recurrent depression. Am J Psychiatry. 2004 161:1872–1876. AMS

Contact AMS for a complete list of references.



Pinnacle Pointe

BEHAVIORAL HEALTHCARE SYSTEM

Specializing in mental health
treatment for children and adolescents

Pinnacle Pointe Behavioral Healthcare System is located in Little Rock and is one of Arkansas' largest behavioral health facilities. We offer acute inpatient and residential services for children and adolescents ages 5-17 who are struggling with emotional or behavioral health issues.

We Provide a Full Continuum of Behavioral Healthcare Services

- Residential inpatient care
- Day treatment services
- School-based services
- Partial hospitalization
- Acute inpatient care
- Outpatient services

11501 Financial Centre Parkway
Little Rock, Arkansas 72211
501.223.3322 | 800.880.3322

PinnaclePointe
Hospital.com

TRICARE[®]
Certified

Traumatic Extradural Internal Carotid Artery Pseudoaneurysm Resulting in Insidious Onset Carotid Cavernous Fistula

Lindsay Mohney, DO;¹ Sarah Hunton, MD;¹ Rani Lindberg, MD;²

¹Resident Physician, Department of Physical Medicine and Rehabilitation, UAMS

²Associate Professor, Department of Physical Medicine and Rehabilitation, UAMS

Abstract

Carotid cavernous fistula (CCF) is a condition resulting from abnormal cavernous sinus and carotid artery communication from a ruptured infraclinoid aneurysm. Traumatic aneurysms represent 0.15-0.4% of intracranial aneurysms, usually affecting young males, and are vulnerable to fractures due to typically anterior locations. In this case, a 59-year-old woman with traumatic brain injury had initial imaging revealing skull fractures, hemorrhages, and 3.5mm right internal carotid artery pseudoaneurysm. Three weeks later, exam revealed right ocular bruit. CTA head confirmed CCF. Acute injuries can mask symptoms of CCF and delay diagnosis. Early intervention of asymptomatic aneurysms may reduce or eliminate risk of CCF.

Case Diagnosis

A 59-year-old traumatic brain injury patient with acute traumatic extradural pseudoaneurysm that resulted in a CCF complicating her post-operative course.

Case Description

A 59-year-old woman was admitted to the hospital after an unhelmeted motorcycle accident that resulted in traumatic brain injury, GCS 8. Initial CT imaging showed: non-depressed right parietal and temporal skull fractures, right mastoid fracture extending to the temporal squamous bone with pneumocephalus, bi-frontal and right temporoparietal intraparenchymal and subarachnoid hemorrhages, 5mm right-to-left midline shift, and small bi-frontal and right frontotemporal subdural hemorrhages. Patient underwent a large right decompressive hemi-craniectomy approximately eight hours after admission due to persistently elevated, acute onset of anisocoria with nonreactive

3mm right pupil and sluggish 2mm left pupil, loss of right corneal reflex, and progressive midline shift on repeat CT head. Pre-operative CT Angiogram revealed 3.5mm probable pseudoaneurysm involving the right internal carotid artery in the lacerum segment just inferior to the cavernous segment; due to emergent issues requiring craniectomy, pseudoaneurysm was not addressed during acute management.

Post operatively, patient had left periorbital ecchymosis, right ptosis, and right-sided facial and periorbital swelling, but pupils were reactive bilaterally. Right corneal edema was noted post op day four, and lubrication was ordered for her eyes.

Patient was transferred to long-term acute care, and ophthalmology was consulted to evaluate right-eye redness and swelling that began post-operatively. PM&R was consulted 16 days after injury; on exam, patient was able to open eyes on command, but was noted to have mild right-eye proptosis and conjunctival injection. Ophthalmology assessment also noted similar ocular exam findings and unremarkable bedside internal ocular exam without a clear cause for symptoms. On follow-up PM&R exam (21 days post-injury), patient was unable to open right-eye. Exam revealed worsening right-eye proptosis and conjunctival injection. An ocular bruit was noted with right-eye



Figure 1: CT angiogram of the head demonstrating right internal CCF with marked exophthalmos and dilated orbital veins.

auscultation. Urgent CTA of the head was ordered based on exam findings that revealed interval development of right CCF, with marked exophthalmos and dilated orbital veins.

Interventional radiology performed endovascular embolization with multiple coils 22 days post-injury. Immediate improvement in orbital swelling and proptosis occurred after interventional procedure. She was admitted to acute rehabilitation for traumatic brain injury 27 days post-injury, where she continued to progress. At the time of discharge to a post-acute neurorestorative rehabilitation center, 50 days post-injury, patient's proptosis had resolved, and she had improving exotropia and right ptosis.

Discussion

We present a case of extradural, inferior clinoid pseudoaneurysm rupture resulting in insidious onset CCF. This is a rare condition (incidence of 0.17% to 1.01%) due to an abnormal connection between the cavernous sinus and carotid artery or its branches.¹ The Barrow CCF classification is the most widely used classification system for CCF. According to the Barrow classification, there are two large categories of CCF: direct (type A) and indirect (Types B-D). Direct CCF formation, most likely secondary to trauma, is the result of an abnormal connection between the internal carotid artery and the cavernous sinus. Direct fistulas are high-flow lesions and are the most common type of CCF, accounting for 75-80% of CCFs overall.² In contrast, indirect CCFs are most commonly low-flow lesions and develop when the meningeal branches of the ICA or ECA form an abnormal connection with the cavernous sinus.³ CCF formation as a result of a ruptured infraclinoid aneurysm may account for one-quarter of all symptomatic cavernous sinus aneurysms.⁴ Traumatic intracranial aneurysms represent 0.15 to 0.4% of all intracranial aneurysms, and most commonly affect young males. These traumatic aneurysms are often pseudoaneurysms and are typically found in the anterior circulation where vessels are vulnerable to injury from adjacent fractures, supporting the association between traumatic CCFs with closed head injuries that involve a fracture of the basilar skull.^{5,3} Risk of hemorrhage in post-traumatic aneurysms is 19% with mortality 32-54%.⁵

Intraclinoid aneurysms present rapidly with cranial nerve palsy, massive epistaxis, and cavernous sinus syndrome. Cavernous sinus syndrome will result in multiple cranial neuropathies



Figure 2: Interventional Radiology cerebral angiogram showing right internal CCF with opacification of cavernous sinus as well as superior and inferior ophthalmic veins.

which may include Horner's Syndrome, impairment of ocular motor nerves, and loss of sensory ability in trigeminal nerve first and second division.⁶ Typically, symptoms from high-flow, direct CCFs present acutely and progress rapidly, thus necessitating urgent treatment. Dandy's Triad are the classic symptoms seen in the development of a direct CCF. The triad includes: Exophthalmos, cephalic bruit, and conjunctival congestion. Venous hypertension is often the result of CCF, and is the cause of ophthalmic manifestations including proptosis, injection of the conjunctiva, decreased vision, and chemosis. Venous hypertension in this case, is a result of shunting of pressurized arterial blood into the cavernous sinus and ophthalmic veins.³ As a result, ocular symptom severity correlates with the venous drainage capacity and the intensity

of flow.⁷ Many of these ocular symptoms were seen in our patient, however, they did not appear until three weeks after the hemi-craniectomy. This supports the need for long term follow up of trauma patients as certain complications from facial trauma may not be clear until late.

Catheter cerebral angiography is the gold standard imaging modality for diagnosis of CCF. Patients might undergo noninvasive cerebral imaging with CT scanning, MRI, or CT/MR angiography first. Evidence of cavernous sinus enlargement, proptosis, extraocular muscle enlargement, superior ophthalmic vein dilation, or dilation of cortical or leptomeningeal vessels, as well as associated skull fractures, may be seen on CT or MRI and are suggestive of CCF.² Due

> Continued on page 94.



Figure 3: Interventional Radiology cerebral angiogram after intracranial coil detachment revealing normal opacification of the intracranial vasculature and total obliteration of the fistula.

to high blood flow, spontaneous thrombosis of direct CCFs is very rare. Treatment for CCF includes monitoring ophthalmic status and treating any ophthalmic complications in addition to closure of the CCF. The preferred method of closure for intracranial aneurysm and CCFs is intravascular embolization or, less commonly, open surgical procedures. According to multiple CCF case reports, transarterial embolization with intravascular balloons is the most effective procedure for treating direct CCFs or CCFs arising from the external carotid artery, while transvenous embolization is the most common approach for indirect CCF if treatment is warranted.^{2,7} The embolization procedure may utilize coils, detachable balloons, stents, or liquid embolic agents.^{2,3} If endovascular embolization has failed, surgical treatment such as ICA ligation or cavernous sinus packing is an option.³ As mentioned, our patient underwent endovas-

cular embolization with multiple coils. More than 80% of patients who undergo endovascular treatment for direct and indirect CCFs will experience a complete cure. Overall success rates for surgical treatment are between 31-79%.² Ocular pulsation and murmur typically disappear immediately after embolization. In a study conducted in 2016 that looked at clinical improvement in patients undergoing endovascular coiling in traumatic CCF, it was noted that the disappearance of the ocular bruit suggests successful embolization and can be regarded as criteria of response during the procedure.³ This study also noted that the degree of occlusion has direct correction with improvement in symptoms.³ Edema and/or ocular palsy usually resolve after several weeks or months.² The majority of fistulas are not life-threatening; rare complications include ischemic strokes or hemorrhagic changes, which may be lethal.

Conclusion

Carotid-Cavernous sinus fistula, is a known but rare vascular complication from ruptured intracranial aneurysm and craniomaxillofacial trauma. These patients often suffer from multiple complex conditions related to traumatic brain and facial trauma, which may mask classic presenting symptoms and cause delay in detecting carotid-cavernous fistulas. CCFs are typically associated with significant morbidity and, in some cases, are associated with intracranial hemorrhage and even death. Thus, early recognition and treatment is necessary. Appropriate and timely treatment may lead to complete resolution of symptoms. In this case, early intervention for the asymptomatic aneurysm may have reduced or even eliminated the risk of CCF and its sequelae.

References

1. P. Schütz, P. Bosnjakovic, Y. B. Abulhasan and T. Al-Sheikh, "Traumatic carotid-cavernous fistula in a multiple facial fractures patient: case report and literature review," *Dent Traumatol*, vol. 30, pp. 488-492, 2014.
2. J. Ellis, H. Goldstein, E. J. Connolly and P. Meyers, "Carotid-cavernous fistulas," *Neurosurg Focus*, vol. E, no. 9, p. 32, 2012.
3. D. Joshi, D. Singh, D. Garg, D. Singh and D. Tandon, "Assessment of clinical improvement in patients undergoing endovascular coiling in traumatic carotid cavernous fistulas," *Clinical Neurology and Neurosurgery*, vol. 149, pp. 46-54, 2016.
4. W. J. Roojja, M. Sluzewski and G. Beute, "Ruptured Cavernous Sinus Aneurysms Causing Carotid Cavernous Fistula: Incidence, Clinical Presentation, Treatment and Outcome," *AJNR*, vol. 27, pp. 185-189, 2006.
5. J. Miley, G. Rodrigues and A. Qureshi, "Traumatic Intracranial Aneurysm Formation following Closed Head Injury," *J Vasc Interv Neurol*, vol. 1, no. 3, pp. 79-82, 2008.
6. J. H. Lee, H. K. Lee¹, J. K. Park, C. G. Choi and D. C. Suh, "cavernous sinus syndrome: clinical features and differential diagnosis with MR imaging," *American Journal of Roentgenology*, vol. 181, pp. 583-590, 2003.
7. C. Paulo, F.-S. Jose, M.-F. Ana-Belen, M.-L. Ildefonso and R.-R. Maria, "Posttraumatic carotid-cavernous fistula: Pathogenetic mechanisms, diagnostic management and proper treatment. A Case Report," *Journal of Clinical and Experimental Dentistry*, pp. 226-229, 2016. AMS



AMS
Benefits, Inc.

exclusive insurance coverage for Arkansas physicians

Created by the Arkansas Medical Society to deliver quality insurance coverage to Arkansas physicians, their families and their practices.

Providing the protection you need to focus on your patients.

Coverage Includes

- Group Health
- Individual Health
- Group Disability
- Individual Disability
- Health Savings Account Plans
- Business Overhead
- Life Insurance
- Dental Insurance
- Vision Insurance



Comprehensive Insurance. Custom made for you.

www.ArkMed.org/AMSBenefits

800.542.1058 | Agency NPN# 1650351 | AR License #100112594



In our world,

STAYING SHARP

has nothing to do
with your instruments.

We strive to bring the latest theories
and practices right to our physicians through
online and in-person education and consultation.



svmic.com | 870.540.9161