Federal Air Surgeon's
Medical Bulletin

Aviation Safety Through Aerospace Medicine

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For FAA Aviation Medical Examiners, Office of Aerospace Medicine Personnel, Flight Standards Inspectors, and Other Aviation Professionals.

U.S. Department of Transportation
Federal Aviation Administration

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REMINDER

Please order your FAA forms *before* running out. This will save considerable embarrassment and will better serve your airman applicants. Contact the shipping department if you need supplies:
Gail.Gentry@faa.gov
(405) 954-4831

QUICK FIX

Answering the E-Mail

By Richard 'Dick' Jones, MD

PROBLEM

We (the FAA) need a quick, effective way to communicate information to Aviation Medical Examiners (AMEs). For example, the most recent issue of the *Federal Air Surgeon's Medical Bulletin* contained some incorrect Theme Seminar dates. We really wanted to inform AMEs of the correct dates before anyone made plans or incurred expenses booking non-refundable flights on the wrong dates. It was decided to try using our list of E-mail addresses for AMEs to find out how useable E-mail notifications might be and to detect problems in use of such a system, by sending an E-mail to everyone on November 3, 2006.

We found 1036 (22.9%) of our 4,517 AMEs had not provided us E-mail addresses, so we could only send 3,481 messages. Our system indicated 80.4% (2,797) of sent messages were received, meaning 691 (19.9%) of the addresses we had been given were inaccurate. Worse yet, of the 2,016 messages received, only 781 had been opened by one month after they were sent.

RESULT

Only 17.3% of our AMEs had seen this important E-mail message within one month of being sent. Clearly this is not a quick, efficient means of communication! We need to improve if technology is to help us streamline.

SOLUTION

Please evaluate why you might have failed to receive our message if you do not recall getting one. If your computer has a spam blocker, please add us to your acceptable mail list (If you missed my article in the last *Bulletin* about how to program your spam blocker to not reject our E-mails, go to the FAA Web site www.faa.gov/library/reports/medical/fasmb/archives/. Click on the Fall 2006 issue for complete information).

If the address we have is one you rarely check or if you don't recall ever giving us an address, please provide the best address to your Regional Flight Surgeon's office, so we can update your information. The regions now have a list of the names of AMEs falling into the undeliverable, unopened, and deleted categories. Your region may contact you for a more viable address. We will do another test when the dust settles.

Dr. Jones manages the Civil Aerospace Medical Institute's Aerospace Medical Education Division.

Tulsa AME Killed In Crash

Called 'Consummate Contributor' by Friends

By David Hale

Guy Baldwin, DO, AME, ATP, CFII, died October 4, 2006, in an airplane accident at the Rotary Club Airshow in Tucumcari, New Mexico. He was killed when his fully aerobatic, German-made Extra 300L crashed while performing a loop at the air show. Guy "Doc" Baldwin, was 60 years old.

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'Tough Acts…'

By Fred Tilton, MD

David Millett, MD, recently retired, and in January 2007, the FAA Office of Aerospace Medicine and all of you waved farewell to two other colleagues as they moved on to the next phase in their lives: **Joel Dickmann**, DO, and **Doug Burnett**, MEd. These three gentlemen have accumulated more than 74 years of federal service.

David Millett, MD

David came to the FAA in 1990, having served around the world as a flight surgeon in the United States Air Force and as the medical director for Eastern Airlines, so he came to us with a wealth of aviation experience. He was hired as the Regional Flight Surgeon for the Southern Region, and it was immediately apparent that he really "knew the business," so all of us looked to him for advice and counsel. He is a Fellow and active member of the Aerospace Medical Association where he has received many awards and accolades, and he is a recognized leader in both the Civil Aviation Medical Association and the Airlines Medical Directors Association. Whenever I needed some help or a volunteer for a special project, Dave was always there with his "hand up." He especially loved to make presentations, and his resonant voice, which he honed as a radio announcer when he was a young man, made him a very effective speaker.

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Secretary of Transportation
Mary E. Peters

FAA Administrator
Marion C. Blakey

Federal Air Surgeon
Fred Tilton, MD

Editor
Michael E. Wayda

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Authors may submit articles and photos for publication in the Bulletin *directly to:*

Editor, FASMB
FAA Civil Aerospace Medical Institute
AAM-400
P.O. Box 25082
Oklahoma City, OK 73125
e-mail: Mike.Wayda@faa.gov

Joel Dickmann, DO

Joel Dickmann also arrived on the FAA scene in 1990 when he was hired as the Assistant Regional Flight Surgeon for our Northwest Mountain Region. He was appointed Regional Flight Surgeon for our Central Region in 1992.

Joel was a pharmacist before attending medical school, and he came to us from private practice where he also served as a flight surgeon for the Army National Guard. Joel's broad experience, coupled with his "can do" attitude, made him the person I could always call on in a pinch. On more than one occasion, Joel volunteered to spend several months in Oklahoma City to help the Certification Division when they were short of staff. Somehow, even though he was several hundred miles away from his home office, he managed to keep his region running smoothly; indeed, a real tribute to his skill as a manager and leader.

Douglas Burnett, MEd

Doug Burnett joined the FAA in 1987. He came to us from the U.S. Postal Service, where he was a manager in their Technical Training Institute. One of his responsibilities as the manager of our Aviation Medical Examiner Program was making the arrangements for all of the seminars that you have attended over the years.

On some occasions, the hotels we contracted with did not live up to their agreements, but we could always count on Doug to "recover." He had a smile and a good word for everyone, and he could magically find a solution to every problem.

As you can see, all three of these gentlemen have been major contributors to the Office of Aerospace Medicine's success, and we will miss them a lot. Selfishly, I tried my best to get each of them to stay around until after I retired, but they all said, "It was their time."

We have already filled in behind Joel with **Larry Wilson,** who was a member of our certification staff in Oklahoma City, and we will be filling the other two positions in the near future.

However, all three of them will be tough acts to follow and difficult to replace. I know you will all join me in wishing them success, happiness, and a safe journey.

–Fred

Certification Update

Information About Current Issues

By Warren S. Silberman, DO, MPH

FAAMedXPress Update

FAAMedXPress is a new addition to the Aeromedical Certification Subsystem that will allow an airman to go to a Web site and electronically input his or her history data, thereby eliminating the need to submit a paper history form. In the last edition of the *Bulletin,* I informed you that we were going to make this system available to airmen by November 15, 2006. However, we encountered a medical-legal issue that caused us to delay the implementation of this new system element. The problem centers on the airman's ability to change the Form 8500-8 (FAA Flying Examination) after having submitted it to us.

To assure that the history is accurate and for us to document that any changes were actually made by the airman, he or she will not be able to make any changes until first discussing them with you. If you and the airman agree that changes are necessary, you will have to submit a paper version of the form that documents the changes. We will then take the paper form and scan it into our system. Unfortunately, the consequences of this issue will result in your having to submit a paper 8500-8 in the event of changes, but it is the only method we have to assure the accuracy of the data and to protect the integrity of the system.

These proposed additions will be completed by the end of January 2007, and we will then make the Web site available. I apologize for this delay.

Don't Be Fooled

The Aircraft Owners and Pilot's Association (AOPA) has a benefit for its members called TurboMedical that allows a member to log on to the AOPA Web site and complete the front side of a simulated Form 8500-8 (medical history). TurboMedical looks just like the FAA medical form. Until just recently, it had the imprint of the FAA airmen medical certificate in the upper left-hand corner and a certificate number at the top.

Some AMEs have mistaken TurboMedical for the new FAAMedXPress. TurboMedical is not FAAMedXPress, and TurboMedical is not an FAA-approved form.

If an airman reports to your office with a completed TurboMedical form, we prefer that you have the airman transfer the information onto a valid FAA Form 8500-8. However, to accommodate our airmen, we will accept the TurboMedical form if it is signed in the presence of you or your staff and then attached to a blank 8500-8 that bears the number consistent with the number on the medical certificate or medical/student pilot certificate that is issued to the applicant. Both the TurboMedical form and 8500-8 should be sent to the Aerospace Medical Certification Division (AMCD) after the examination data are electronically transmitted to the AMCD.

Suggestion

This subject was covered in a previous *Bulletin* [e.g., AOPA's 'TurboMedical' is Not Approved as a Substitute for Form 8500-8," by Richard Jones, MD; Vol. 43, No. 2, p.1). Each *Bulletin* is filled with pertinent information designed to keep you and your office staff informed and up to date. Once you have read it, please share it with your staff, and keep it on file for reference.

Dr. Silberman manages the Civil Aerospace Medical Institute's Aerospace Medical Certification Division.

Distance Learning Course Procedures for AMEs

By Ridge Smith

AN OPTION AVAILABLE to aviation medical examiners to complete their required refresher training is by distance learning through two interactive, Internet-based AME courses: Multimedia Aviation Medical Examiner Refresher Course (MAMERC) and Clinical Aerospace Physiology Review for AMEs (CAPAME).

These courses may be substituted for attendance at an AME seminar at the three-year point between seminar attendance. Specifically, AMEs must perform refresher training every three years to maintain their designation.

This requirement may be satisfied by attending one of the AME seminars held six times yearly at various locations or by completing one of the on-line AME courses. However, no more than six years can elapse between attendance at "live" seminars.

Quirky Technical Problems

We need to make you aware of some problems we are currently experiencing with these on-line courses to help you avoid frustration if you choose to use them.

The on-line instructional courses were put into operation in 2002 and since that time, a combined total of over 1,700 AMEs have successfully completed these courses. A problem has been reported by some AMEs that the interactive course has not correctly recorded their progress in the course. Sometimes credit for individual modules of the course was dropped or completion of the final test was not recorded. We in the Education Division have not been able to determine the exact cause for this problem, or why some AMEs are affected while others are not.

If you experience any of the above

Continued on page 11

Sport Pilot Medicals

Dear Editor:

I would like clarification regarding the answer given **Dr. Lewis** in the most recent issue of *Federal Air Surgeon's Medical Bulletin* [Letter to the Editor, Vol. 43 No. 3, p. 9]. He had asked about LSA [Light Sport Pilots] pilots self-certifying for conditions considered disqualifying and Dr. Silberman had answered that they could be considered "safe to fly" by their personal physician.

There are two problems that I see with this approach. First, the LSA class allows these pilots to self-certify so they might not ask their physician for advice or will ignore negative advice and fly with the idea that their driver's license gives them carte blanch to fly. Secondly, the non-AME physicians may approve their flying without fully understanding the risks. I've had applicants angry about being denied certification and had stated, "My Doctor said he would fly with me!"

What should we advise these applicants with considerable risks? Self-certify or PCP [Primary Care Provider] approval?

Joseph Kennedy, MD
Cedar Rapids, IA

Dear Dr. Kennedy:

You are correct in your assumptions. This is the intent of the medical aspect of sport pilot. Technically, all the airman needs to do is to check with their respective state drivers' license boards to see what is actually unacceptable to drive an auto with. I doubt that many of them will do so. Currently, airmen of any class must "self certify" each time they fly. It is really up to the non-AME physician to "get smart" on what he is telling his Sport Pilots.

Warren Silberman, DO, MPH

Want Ads Wanted

Dear Editor:

As a non-senior AME who gets repeated requests to do class-I physicals, I would love to move to senior AME status. The major limiting factor is purchasing a very expensive EKG machine capable of transmitting the ECG to the FAA AMCS.

I have often wondered: Why not have a classified section in the *Federal Air Surgeon's Medical Bulletin* where an AME could buy/sell action medical equipment pertinent to aviation medical exams, such as the transmitting ECG machines, vision test equipment, Welch Allyn pan optic ophthalmoscopes, etc. The classifieds would give a great opportunity for AMEs to upgrade equipment and improve the quality of the exams.

I discussed this with my Regional Flight Surgeon, who thought this was a good idea. I hope you do too.

Fred C. Hollar, MD
Auburn, Mass.

Dear Dr. Hollar:

Your idea about creating a classified section in the Bulletin is a good idea, albeit an unusable one for us. When we looked into this several months ago, we were told by the legal department that the Federal government is prohibited from entering into this type of activity because it is considered a form of advertising for private individuals.

As an alternative, we can refer you to the Civil Aviation Medical Association for space in their newsletter to advertise as you suggested. We have discussed this with Mr. Jim Harris, Vice President of the association, and he has agreed to provide limited advertising space in their Flight Surgeon newsletter. You can contact Mr. Harris at:

Civil Aviation Medical Association
P.O. Box 23864
Oklahoma City, OK 73123
E-Mail: JimHarris@aol.com

Thanks for the suggestion.

Michael Wayda

Dr. Baldwin from page 1

Dr. Baldwin was a physician and aviation medical examiner who performed more than 2,000 flight physicals each year in Tulsa, Okla. He had logged more than 4,000 flight hours during his 35 years of piloting acrobatic, sea, warbird, and helicopter aircraft.

Guy Baldwin was a flight instructor, physician, and consummate contributor, constantly giving to multiple charities and other endeavors. Guy worked with *Challenge Air*, helping physically challenged children. He supported *US-TOO,* an international group of cancer survivors. He began performing at air shows in 2002, flying under the banner of the *Make-A-Wish Foundation,* and he often personally fulfilled the wishes of children with terminal illnesses.

He served on The Experimental Aircraft Association's aeromedical advisory board, the Tulsa Air and Space Museum's board, and he rebuilt Oklahoma Chapter 10 of the International Aerobatics Club, attracting international aviation figures like Patty Wagstaff and General "Chuck" Yeager.

He was a contributing editor for several aviation publications, including *General Aviation News*, *EAA Sport Aviation,* and *The Oklahoma Aviator*. He was also at the forefront of pilot advocacy. In 2003, Guy was named Oklahoma Aviator of the Year.

Dr. Baldwin is survived by his wife, Felice; daughter, Brittny; and son, Hunter.

Guy Baldwin: Physician, Pilot, Servant

- *Guy was an avid flyer, a tremendous supporter of the (EAA) medical council, and a tremendous advocate for pilot certification. He worked very hard on improving the process, helping pilots with the special issuance process, getting through the snags and delays of aeromedical certification.*

—Jack Hastings, MD

- *I know of few AMEs who had the patience and took the time to find out information on his specific airmen other than Guy. He knew our policies quite well. He was what a 'good aviation medical examiner' should be.*

—Warren Silberman, DO

David Hale is the executive director of Pilot Medical Solutions, a Tulsa, Okla., pilot aeromedical advisory firm.

CAMI Researcher Passes ABPM Board Exam

Arnold Angelici Jr., MD, MS, Team Lead for the Environmental Physiology Research Team at the Civil Aerospace Medical Institute (CAMI) in Oklahoma City, received notification from the American Board of Preventive Medicine that he successfully passed both the Core and the Aerospace Medicine portions of the exam. The ABPM has awarded him Diplomate status.

A graduate of Mexico's Autonomous University of Guadalajara, Dr. Angelici received his Master of Science in Aerospace Medicine from Wright State University. He was hired by CAMI after completing a postdoctoral fellowship at CAMI through the National Academy of Sciences. He is an associate Fellow of the Aerospace Medical Association and a senior aviation medical examiner. He is a member of the Commemorative Air Force and consults with their Flight Safety and Operations Department.

As a member of the Oklahoma Wing of the Commemorative Air Force, Dr. Angelici qualified to fly the Wing's Fairchild PT-19. Last year, he shared his enthusiasm for flying with others by donating rides in the PT-19 during the 2006 Combined Federal Campaign.

UP AND AWAY. Dr. Angelici at the controls of the PT-19

Contacts in the CAMI Aerospace Medical Division

Below is a current list of whom to call or E-mail for various functions related to aviation medical examiner services.

Name	Title/Responsibilities	E-Mail Address	Phone (405)-
Deanie Davis	AME Program Assistant: AME records	Deanie.Davis@faa.gov	954-4257
Gail Gentry	Supply Clerk: distribution of all FAA AME forms and brochures	Gail.Gentry@faa.gov	954-4831
Sharon Holcomb	Training Assistant: all Distance Education (MCSPT, CAPAME, & MAMERC) for AMEs	Sharon.Holcomb@faa.gov	954-4829
Leah Olson	Training Analyst: Theme AME seminars	Leah.Olson@faa.gov	954-4258
Denise Patterson	Training Assistant: Basic AME seminars	Denise.Patterson@faa.gov	954-4830
Bobby Ridge	Program Analyst for the International and Military/Federal Region	Bobby.Ridge@faa.gov	954-4832
Ridge Smith	Instructional Systems Specialist: AME seminars	Ridge.Smith@faa.gov	954-4379

Ms. Corbett Named 2006 CAMI Employee of Year

Cynthia L. Corbett, a Research Human Factors Specialist on CAMI's Cabin Research Team, was chosen as the 2006 Employee of the Year.

CAMI Director Melchor J. Antunaño, MD, congratulates Ms. Corbett for her accomplishments for the Cabin Safety Team.

Ms. Corbett was cited as "a CAMI rising star, radiating accomplishment and illuminating paths of opportunity" in the workplace.

In addition to her job as a principal Cabin Research investigator, statistician, and research author, she volunteered her time as the Federal Women's Program manager at the Mike Monroney Aeronautical Center and served as co-chair of the Federal Women's Program Council on the Federal Executive Board.

Ms. Corbett further distinguished herself by earning a Masters degree in her "spare" time.

Each year, employees at the Institute nominate commendable fellow workers for the award. An employee committee reviews the nominations and selects the winner.

✈

An Aviator With Meniere's Disease

Case Report, by Kelly N. West, MD, MPH

Abstract

Meniere's disease can cause sudden, debilitating, and unpredictable attacks of vertigo, and, as such, is of great concern when seen in an aviator. This article presents the case of a pilot afflicted with Meniere's disease. A review of the epidemiology, pathophysiology, treatment, and prognosis is provided. The aeromedical implications of the disease and of the available treatment options are also discussed.

Clinical History

The case airman, a 46-year-old Airline Transport Pilot with approximately 13,000 hours' flying time, presented to his aviation medical examiner for renewal of his first-class medical certificate. The FAA Form 8500-8 reflects that he was occasionally using Dyazide, a thiazide diuretic, for control of "tinnitus and plugging of his ears." The AME advised the airman that he would "need to have his potassium checked if he ever used Dyazide for a period longer than three weeks." The airman was then issued a first-class medical certificate by the AME.

One week after his visit to the AME, the airman suffered an attack of dizziness, described as a sensation of the room spinning, and which lasted for several hours. He subsequently was seen by an ENT specialist and admitted to a 3½ year history of fullness and inflammation in his left ear, as well as a progressive decrease in hearing in the same ear. The airman was then referred for a battery of tests—audiometry, electronystagmography (ENG), brain and head MRI, and blood work (CBC, TSH, RPR), all of which were within normal limits.

The airman continued to suffer episodes of intermittent dizziness, ear fullness, hearing loss, and tinnitus over the ensuing weeks, despite a low-salt diet and maximal diuretic therapy. Two months after the initial episode of vertigo, he underwent elective left endolymphatic sac decompression and shunt placement. In the weeks following surgery, his dizziness and auricular pressure resolved, but some left-sided hearing loss persisted. Six months after his surgery and free of dizziness, the airman was issued a time-limited, special issuance medical authorization letter by the FAA.

Two months later, the airman again began to experience episodes of severe dizziness and consulted his ENT again. When the FAA became aware of the recurrent symptoms, the special authorization was withdrawn, and the airman voluntarily surrendered his medical certificate.

The episodic symptoms continued over the following months, and, after discussing further therapeutic options with his ENT, the airman elected to undergo intratympanic gentamicin therapy for nerve ablation. A single injection of gentamicin was administered into the middle ear via myringotomy. The dose used was intended to provide partial ablation so as to control the Meniere's symptoms without unduly affecting normal hearing and balance. Following the pharmacologic nerve ablation, the airman had no further dizziness episodes and had sufficient hearing function to discern a whispered voice.

Three months following the partial ablation procedure, with no further episodes of dizziness, the airman reapplied for medical certification. Supporting documentation included an audiogram that demonstrated mild hearing loss in the left ear and ENG results showing partial suppression of the left vestibular system. The Aerospace Medical Certification Division referred the case to one of its otolaryngology consultants for review and recommendations regarding aeromedical disposition. Citing the unpredictable nature of Meniere's and the possibility that the disease could recur in any patient treated with subtotal ablation, the consultant recommended that issuance be denied. He further recommended that, should the airman pursue total ablation (either surgical or pharmacologic), medical reinstatement would be a reasonable consideration. Based upon the consultant's recommendations, special issuance was denied.

Aeromedical Implications

Meniere's disease is disqualifying under the general condition provision of Title 14 CFR §61.53. Current FAA medical certification policy holds that medical certification for any class shall not be issued until vertigo, due to any cause, is fully resolved. No medication is acceptable for continuous daily use in the treatment of vertigo while performing pilot duties, and pilot duties must be discontinued while on medication. In the specific instance of Meniere's disease, certification should not be issued to any airman with active disease. A certificate may be issued if the condition has been in remission for a period of 3 months, with a complete ENT evaluation to document remission. Medical certification should not be issued for any class if there is a recurrence of vertigo after initial remission. Complicated cases should be referred to the FAA's Aeromedical Certifications Division for consideration.

Case Outcome

Following FAA denial, the case airman appealed to the office of the Federal Air Surgeon. With supporting evidence provided by his ENT and recent meta-analyses of the medical literature regarding the comparable efficacy and relapse rates of partial versus complete nerve ablation, his appeal met with favorable consideration. The airman was granted a time-limited, authorization for special issuance of a class-I medical for a period of 6 months.

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MENIERE'S DISEASE

Meniere's disease, also known as endolymphatic hydrops, accounts for approximately 5% of adults presenting clinically with dizziness.[1] Classically, Meniere's *syndrome* is typified by the clinical tetrad of vertigo, tinnitus, hearing loss, and aural fullness. Idiopathic Meniere's syndrome (i.e., those cases not attributable to an identifiable cause like syphilis) is referred to as Meniere's disease.

Epidemiology. The incidence of Meniere's disease in the US is approximately 150 cases per 100,000 population. Onset typically occurs in middle adulthood with mean age of onset ranging from 46-67 years.[2] Women are affected with a higher frequency than men by a proportion of 1.3:1.[3] Roughly 50% of sufferers have a positive family history of Meniere's disease, suggesting a genetic predisposition.

Etiology. Current thinking holds that Meniere's disease is caused by a distortion of the membranous labyrinth due to endolymphatic hydrops. This excess of the potassium-rich endolymph may be from overproduction or impaired absorption. The association between hydrops and Meniere's is not absolute, insofar as not all instances of hydrops are associated with Meniere's symptoms.[4] Rupture of the membranous labyrinth is thought to be a key element in the pathophysiology of Meniere's. Rupture allows the potassium-rich endolymph to mix with the potassium-poor perilymph around cranial nerve VIII and the basal surfaces of the hair cells, leading to nerve excitation and the sequelae of the disease. Healing of the membrane rupture allows restitution of the normal potassium milieu and resolution of the attack. Chronic deterioration in inner ear function is, presumably, due to the effects of repeated hyperkalemic insults upon the hair cells.

Inflammation of the endolymphatic sac, either due to viral infection or autoimmune processes, has also been implicated in the pathophysiology of Meniere's.

Clinical presentation. As in the case airman, the typical presentation of Meniere's disease is with the constellation of vertigo, tinnitus, aural fullness, and ipsilateral hearing loss. Symptoms may not occur simultaneously. One study showed that 50% of patients presented with vertigo and hearing loss, while 19% had vertigo alone and 26% had isolated, unilateral hearing loss.[5]

The vertigo associated with Meniere's disease can be both debilitating and unpredictable. Attacks may be separated by months or years, or may occur in rapid succession. The vertiginous symptoms may be so profound as to cause total incapacitation and spatial disorientation. These features of the disease clearly raise great concern in the aviation and aeromedical communities.

Diagnosis. There is no single, pathognomonic finding for making the diagnosis of Meniere's disease. Presumptive diagnosis is often made based upon the constellation of symptoms. The American Academy of Otorhinolaryngology recommends specific criteria for diagnosis (Table 1).[6]

Other causes of dizziness and or hearing loss should also be considered in the differential. The list of possibilities is long and includes labyrinthitis, neoplasm (e.g., acoustic neuroma), transient ischemic attack/stroke, multiple sclerosis, migraine, thyroid disease, drug toxicities (e.g., salicylates, aminoglycosides), and vestibular neuronitis.[7]

Treatment and Prognosis. Currently, there is no recognized cure for Meniere's disease. Therapy is largely directed at controlling symptoms, especially vertigo, the most distressing of the sequelae. Initial, conservative medical therapy usually attempts to diminish the production and/or accumulation of endolymph. Salt restriction and use of diuretics is the most commonly used, first-line medical therapy and has been reported to control vertigo in up to 58% of patients.[8] Steroids, either taken orally or administered via intratympanic injection, have also been used as initial treatment.

For those patients who fail medical therapy, surgical intervention to decompress the vestibular sack is often the next step. Decompression may be accompanied by placement of a shunt to prevent reaccumulation of excessive endolymph. Success rates of 50-75% have been reported with surgical decompression.[3]

Surgical therapies have been used to some effect in Meniere's patients. Selective vestibular neurectomy has shown up to a 90% success rate in providing relief from intractable Meniere's-associated vertigo but does risk complications like facial nerve paralysis, hearing loss, CSF leak, and chronic headache. Labyrinthectomy also provides excellent control of vertigo, albeit at the expense of hearing loss in the operated ear.

Intratympanic administration of aminoglycoside antibiotics, employing their ototoxic properties to ablate vestibular neurons, has proven effective in treating vertigo in Meniere's sufferers. The hearing loss rates noted in early trials have been reduced in subsequent trials using regimens of multiple, smaller doses of the drugs. Recent studies of partial ablations using gentamicin have shown success rates comparable to selective surgical ablation, with better residual vestibular and auditory function.[9]

Table 1: American Academy of Otorhinolaryngology Diagnostic Criteria for Meniere's Disease

•Two or more episodes of vertigo, each lasting 20 minutes or longer
•Hearing loss documented on audiogram on at least one occasion
•Tinnitus and/or fullness in the affected ear
•All other causes excluded (usually by gadnolinium-enhanced cranial MRI)

Venous Angioma in an Airman

Case Report, by Shino Hara, MD

Cerebral venous angioma generally has a benign clinical course; however, it might cause cerebral hemorrhage or seizure. On evaluation of an applicant with cerebral hemorrhage due to venous angioma, ruling out other primary diseases is important to consider about the potential of incapacitation.

History. A 42-year-old male commercial airline pilot with more than 4,000 hours presented to renew his first-class medical certificate. He had been involved in a motorcycle accident 8 years ago in which he was struck by a car. He seemed to be otherwise intact, but a computerized tomography (CT) scan was done to see if he had a brain injury.

A small, low-intensity area was seen in the white matter of the left frontal lobe. A magnetic resonance imaging (MRI) and magnetic resonance angiography (MRA) were performed the following month, and a venous angioma was diagnosed in the left frontal lobe.

An electroencephalogram (EEG) and neurological examination were normal. He was issued a special issuance (SI) to resume first-class aviation activities. He had had annual neurological examinations and brain MRIs, and there had been no significant change for 6 years. The latest brain MRI was performed 7 years after the first MRI. It showed an old hemorrhage that was approximately 7mm in diameter in the left frontal lobe for the first time.

The venous angioma had not changed at all and no other cerebrovascular disease was seen. The new findings were compatible with an old bleed related to the known venous angioma. The onset of bleeding was suggested to be at least 1 year ago, but it was not seen on the previous MRI.

The neurologist commented that the reason it was not seen in the previous MRI seemed to be the difference in equipment. The total neurological

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Venous Angioma

Cerebral venous angiomas are assumed to be congenital lesions resulting from arrested or disordered venous maturation. They are thought to be anomalies of normal venous drainage (1, 2). The lesions have been described as "venous angioma," "venous malformations," or "developmental venous anomalies." Of the four recognized cerebrovascular malformations, which include cerebral venous angiomas, arteriovenous malformations, cavernous malformations, and capillary telangiectasias, venous angiomas are the most frequent ones documented by brain imaging. Autopsy series document a prevalence that may be as high as 3% (3, 4). Imaging studies show characteristic caput medusae in the late venous phase of angiography with a normal circulation time and a normal arterial phase. On MRI, they appear as a stellate vascular or contrast-enhanced masses. They are composed entirely of thickened and hyalinized veins, containing minimal smooth muscle and elastic tissue interspersed within normal brain parenchyma.

The angiomas are most frequently located in the frontal lobe (55.6%), followed by the cerebellum (27%), temporal lobe, parietal lobe, basal ganglia, and pons (5). The association of venous angiomas with other vascular malformations is well documented.

Although patients with venous angiomas have been considered to be at risk for hemorrhage, Naff et al. reported (5) that the annual risk of hemorrhage was 0.15% in 92 patients with radiographically confirmed venous angiomas, and the few hemorrhages that did occur were not associated with mortality or permanent damage. Therefore, any hemorrhage in the setting of a venous angioma should prompt a search for another cerebrovascular lesion that is more likely to be the cause of the hemorrhage. A second cerebrovascular lesion was identified in 19%; the most common associated lesion was cavernous malformation (12.7%), followed by aneurysm (4.8%). Some authors assert that a hemorrhage in the context of venous angiomas was likely related to an associated cavernous malformation (6, 7). The most common symptom was headache (50.8%), followed by focal neurologic deficit (39.7%), and seizure (30.2%). In some cases, a relationship between headache and venous angioma could not be proven. The prevalence of headache and seizure decreased as the length of follow-up increased, without treatment.

According to recent reports, a benign natural history is suggested for venous angiomas in general. Conservative therapy and observation are recommended because intervention risks probably greatly exceed the low risk that venous angiomas present.

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evaluation with EEG was performed with normal results. He has never had any symptoms or any significant neurological findings. He had no other complications and was taking no medications.

AEROMEDICAL CONCERNS. For all classes of medical certificates, airmen with cerebrovascular disease should be deferred by an AME (8). The aeromedical concerns are mainly the applicant's present physical status and the potential for incapacitation. For consideration of a special issuance (SI), the case must be forwarded to the FAA Aerospace Medical Certification Division (AMCD). The medical history is required, to include current status mentioning medications and complications, MRI and/or angiography, and EEG. For cases with stroke, cardiac evaluations are also required. A neurological specialist's evaluation should also be submitted to the AMCD. Upon their review, the applicant may be granted an SI when the applicant has no sequelae of hemorrhage and the potential of incapacitating rebleeding, seizure, or other symptoms is considered to be low.

OUTCOME. This applicant had no symptoms, and the neurological examination was totally normal. He did not have any associated malformations (such as cavernous malformations or hypertension) and was taking no medications. It had been more than 1 year since the onset of bleeding, and the specialist concluded his possibility of rebleeding or other symptoms, such as seizure, was rare. After review, he was granted a special issuance of first-class medical certificate. An annual neurological evaluation was stipulated, with MRI, and a current status report from his neurologist were required. Any adverse changes in his clinical course should be promptly reported and flying activity ceased.

References

1. Garner TB, Curling OD Jr, Kelly DL Jr, Laster DW. The natural history of intracranial venous angiomas. J Neurosurg 1991;75:715-22.
2. Huang YP, Robbins A, Patel SC, Chaudhary M. Cerebral malformations and a new classification of cerebral vascular malformations; in Kapp JO, Schmidek HH, eds. The Cerebral Venous System and Its Disorders. New York; Grune & Stratton, 1984; 373-74
3. McCormick WF, Hardman JM, Boulter TR. Vascular malformations ("angiomas") of the brain, with special reference to those occurring in the posterior fossa. J Neurosurg 1968;24:241-51.
4. Sarwar M, McCormick WF. Intracerebral venous angioma. Case report and review. Arch Neurol 1978;35:323-25.
5. Naff NJ, Wemmeer JRN, Hoenig-Rigamonti, K, Rigamonti DR. A longintudinal study of patients with venous malformations: Documentation of a negligible hemorrhage risk and benign natural history. Neurol 1998;50(6):1709-1714.
6. Spetzier RF. Radiosurgery and venous malformations. J Neurosurg 1994;80:173-4.
7. Wilms G, Bleus E, Demaerel P, et al. Simultaneous occurrence of developmental venous anomalies and cavernous angiomas. AJNR Am Neuroradiol 1994;15:1247-54.
8. Federal Aviation Administration. Guide for Aviation Medical Examiners. [Accessed from the Internet on 10/25/06]: www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/

Shino Hara, MD, is a visiting physician from the Japanese Aeromedical Research Center in Tokyo. She was at the Civil Aerospace Medical Institute learning about how the Federal Aviation Administration conducts pilot medical certification so these policies can be applied to Japanese medical certification in the future. She wrote this case report while at CAMI.

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References

1. Kroenke K, Hoffman RM, Einstadter D; "How common are various causes of dizziness? A critical review." Southern Medical Journal; 93(2), 2000.
2. Li J. "Inner ear, Ménière disease, surgical treatment." *www.emedicine.com.*
3. Minor LB, Schessel DA, Carey JP. "Meniere's disease." *Curr Opinion in Neurol* February 2004, 17(1), pp 9-16.
4. Rauch SD, Merchant SN, Thedinger BA. "Ménière's syndrome and endolymphatic hydrops: Double-blind temporal bone study." *Ann Otol Rhinol Laryngol* 1989; 98:873-83.
5. Kitahara M. "Bilateral aspects of Ménière's disease: Ménière's disease with bilateral fluctuant hearing loss." *Acta Otolaryngol (Stockh)* 1991; 485:74-77.
6. Monsell EM, Balkany TA, Gates GA, *et al.* "Committee on hearing and equilibrium guidelines for the diagnosis and evaluation of therapy in Ménière's disease." *Otalaryngol Head Neck Surg* 1995; 113:181-5.
7. Lorenzo N, "Meniere's Disease." *www.emedicine.com.*
8. Klockhoff I, Lindblom U. "Ménière's disease and hydrochlorothiazide (Dichlotride®): A critical analysis of symptoms and therapeutic effects." *Acta Otolaryngol (Stockh)* 1967; 63:347-65.
9. Chia S, Gamst A, Anderson J, Harris J. "Intratympanic gentamicin therapy for Meniere's disease." *Otology & Neurotology*; 2004 July; 25 (4): 544-52.

Dr. West was on a clinical rotation at the Civil Aerospace Medical Institute as a Resident in Aerospace Medicine when he wrote this case report. He held the rank of major, USAF, SFS.

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Why I Became an AME

Our vocation is a privilege with great rewards beyond all material wealth and prestige

By Parvez Dara, MD

The author earned his wings in 1992 and became an aviation medical examiner in 2000. He describes what motivated him to seek the designation and why he cherishes it. — Ed.

WHY DID I WANT to become an aviation medical examiner? The short answer: *My AME*. He had built the scaffolding of my desire and the muscle of want flexed its need, and there I was, thinking of ways to be a part of this elite group.

When? I think I can nail the timing to the day of my first flight physical. It was four in the afternoon when I sat in my AME's office. He was a congenial fellow, full of smiles and easy talk, comfortable in his demeanor. He sat behind a desk with his arms folded behind his neck, beaming with energy. We got to talking and it was all about airplanes. His chariot was a Piper with a speed that could transport him from the East to the West Coast in two or three days. His description of those multiple journeys is chronicled in my brain because his attention to detail was exquisite. He never flew in the clouds, and if they hampered his progress, he either sat them out or got out of the way.

> *'Doing AME's work was the best part of his day, he would say.'*

Doing AME's work was the best part of his day, he would say. After his busy OB-GYN practice, he would relax and enjoy a conversation with a fellow pilot about their various escapades. This was his escape from reality three times a week. His was a demanding occupation, and we were interrupted several times by the minutia of the daily practice of medicine, but through it all, he kept his smile and soldiered on with his stories while encouraging a dialogue.

To be honest, I could not even begin to counter his stories with any of mine. His were deliciously appetizing, kind of made you go into a dream mode, cryptic and satisfying. But through it all, in those twenty minutes of conversation, he would make sure to inquire about my aspirations in aviation. The examination was thorough, while he kept me involved with questions about the "dos and don'ts" of flying.

I passed my medical without a hitch and from then on, each time I left his office, I felt good about myself, aviation, and for being a physician. I wanted to be like him. I was already a physician, so that hurdle was crossed, but to become an aviation medical examiner— now that was going to be challenging.

After an initial inquiry with the FAA, I found out that of all the difficulties I faced, the biggest hurdle was... NEED.

On my fifth medical examination with my AME, I finally asked him how I could become an AME. He did not miss a beat and answered, "I have been waiting for this question for a while."

Oh really, I thought. What gives?

Turns out he was planning to retire from his practice and wished to submit a name to the FAA for his successor in the area. Well now, I thought, had I stepped into the fields of my desire by accident or was this a carefully crafted scenario to lure me in?

Turns out it was neither. It was a coincidence, and I was the recipient of the proverbial pot at the end of the rainbow. He had thought of me as a potential successor if I showed an interest. And now I had. What it took was an endorsement from him, and the FAA identified the need with a letter addressed to me. After a week in Oklahoma City, that was it — I had become an AME!

I have enjoyed this privilege, earning the respect of fellow pilots and getting to know a fair number of aviators. This is a select version of humanity: intelligent, gifted, desirous; a group that constantly strives to expand the envelope of knowledge and expertise.

> *'He showed up again in my office two years later in complete remission after battling stage-II seminoma.'*

From airline pilots to student pilots, all have a story to tell, especially the latter, whom I call the "innocents." They bring a blank slate where words, images and their meanings can be assimilated for the future. It is a delight to clear them medically (if they qualify) to face those challenges.

ONE SUCH twenty-something airline-captain-wannabe sat in my office one afternoon, all animated while extolling his desires in the field of aviation. However, his expression changed following the examination when I told him the grim truth about his testicular growth and the differential diagnoses. I shepherded him to the urologist for more fact-finding.

He showed up again in my office two years later in complete remission after battling stage-II seminoma. He wanted to fly now more then ever, and his desire was to command a large commercial jet.

He had restarted his training with a local CFI, and as he sat there on the edge of his seat, half out of breath describing his introductory flight, you could not but wonder at the blessings of fearlessness in his tone. At the end of his story, his eyes narrowed as he came up for air

Continued ⟶

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and asked if I could help him his get his medical certificate.

Absolutely, I would. After all, how could you not? Getting the Aviation Medical Examiner-Issued Special Issuance for a third-class student medical was easy. I told him to continue with his training, though, before deciding to expend resources and energy for higher goals. I would have to obtain the FAA's approval.

'Our vocation is a privilege with great rewards...'

He walked out carrying a new student pilot certificate with an expanded chest and a proud smile of achievement. (He is currently working on his commercial pilot rating.) The joy of seeing him complete his goals has made me realize that helping someone achieve a dream is a reward devoutly to be cherished.

A psychiatrist colleague of mine happened to be in my office the same day and wistfully said that he would give anything to make a person that happy in such short a period of time. I told him, "Those are the perks of this trade, but it takes effort and commitment."

"True," he said, "but I would love to be in your shoes."

"Commitment and effort." I reversed the word flow.

Then, he asked, "How do I become an AME?"

Had I done it? Become one like my former AME? I don't know, but it felt good to be asked that question. Man, did it feel good.

Embodying my former AME's passion has allowed me the discourse of this vocation. Now I am able to assist others in achieving their desires as, years ago, he had fueled mine.

Our vocation is a privilege with great rewards beyond all material wealth and prestige. It rests upon the wings of passion.

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problems, we recommend the following procedures:

- When taking one of these courses, complete each module during a single, uninterrupted session.
- When you complete a module, exit from the course and re-enter the course to begin the next module.
- Finally, when you have successfully completed the final test, make a screen print of your final score by pressing "Ctrl-P" and keep this printout as positive proof that you have completed the test, in case we do not receive your score electronically.

Fortunately, most AMEs are able to successfully complete these on-line courses without difficulty, but we recognize the frustration of those who have temporarily lost credit for their work. Let us know about the problem, and we can correct your record.

If you have any questions about these courses or if you experience any of the problems mentioned, contact Ridge Smith at:

Ridge.Smith @faa.gov

Aviation Medical Examiner Seminar Schedule 2007

February 2 – 4	San Diego, Calif.	NPN (2)
March 5 – 9	Oklahoma City, Okla.	Basic (1)
March 16 – 18	Bellevue, Wash.	CARDIO (2)
May 14 – 17	New Orleans, La. (AsMA)	AP/HF (3)
July 13 – 15	Oklahoma City, Okla.	NPN (2)
August 17 – 19	Washington, D.C.	OOE (2)
August 27 – 31	Oklahoma City, Okla.	Basic (1)
September 14 – 16	Savannah, Ga.	CARDIO (2)
December 10 – 14	Oklahoma City, Okla.	Basic (1)

CODES

AP/HF Aviation Physiology/Human Factors Theme

CARDIO Cardiology Theme

OOE Ophthalmology - Otolaryngology - Endocrinology Theme

N/NP/P Neurology/Neuro-Psychology/Psychiatry Theme

(1) A 4½-day basic AME seminar focused on preparing physicians to be designated as aviation medical examiners. Call your regional flight surgeon.

(2) A 2½-day theme AME seminar consisting of 12 hours of aviation medical examiner-specific subjects plus 8 hours of subjects related to a designated theme. Registration must be made through the Oklahoma City AME Programs staff, (405) 954-4830, or -4258.

(3) A 3½-day theme AME seminar held in conjunction with the Aerospace Medical Association (AsMA). Registration must be made through AsMA at (703) 739-2240. A registration fee will be charged by AsMA to cover their overhead costs. Registrants have full access to the AsMA meeting. CME credit for the FAA seminar is free.

The Civil Aerospace Medical Institute is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

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