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### Bulletin - April, 1989

Civil Aviation Medical Association

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CAMA

# BULLETIN OF THE

CIVIL AVIATION MEDICAL ASSOCIATION

APRIL, 1989

Headquarters  
775 Bank Lane — Room 211  
Lake Forest, Illinois 60045  
phone (312) 234-6330

## President's Message

*By M. Young Stokes, III, M.D.*



## ENJOY LONDON THIS SEPTEMBER WITH CAMA

Time is running and very soon September will be with us and the CAMA meeting in London will be starting, continuing, and finishing. Don't miss this outstanding opportunity to visit London, renew your certification as an Aviation Medical Examiner by attending the FAA Aviation Medicine Seminar which is included. By now you should have received the color brochure showing parts of the meeting such as travel arrangements, costs, etc. Remember the Board of Trustees meeting on the afternoon of Sunday, September 17th, followed that evening by a grand reception with hot and cold hors d'oeuvres and an open bar. Wednesday night will be the medieval feast at the Beefeaters (walking distance). Friday night will be the final banquet at the hotel and Saturday morning will be departure for home.

The minimum information about all that is included with this "package" failed to mention a luncheon on Tuesday September 19th and another luncheon and also a trip to a medical museum on Thursday, September 21st. After the opening ceremonies on Monday, September 18th, most of that day's program will be devoted to FAA forms and explanations for NEW AME's. This might be time for others to go on tours, such as to the Tower of London, just two blocks from the Tower Thistle Hotel which is our Headquarters for the meeting, or to Windsor Castle, and/or the Doll House, or any of numerous short trips available.

Monday, Tuesday and Thursday nights are open. If you want to go to the theater, it will be necessary to get tickets very soon. Two popular theater productions at that time will be "Phantom of the Opera" and "Les Miserables". Our transportation arrangements with British Airways will be flexible enough to permit extensions to visit longer in Britain, or to visit other countries, either before or after the CAMA meeting. The special airfare from the several USA departure cities would *NOT* permit shortening the trip by coming late or leaving early. We have had inquiries about upgrading airfare from Tourist to First Class and this *IS* possible, but if credits from other airline travel clubs or plans are to be used, this must be cleared with the other lines. Mileage credits for this trip on British Airways will be accepted by American Airlines, United Airlines, and U.S. Air. Perhaps others will also accept the mileage credits, but we cannot promise at this time.

### Publications Committee

President	<i>M. Young Stokes, III, M.D.</i>
President-Elect	<i>Stanley J. Kirk, M.D.</i>
Past-President	<i>John H. Boyd, D.O.</i>
Secretary-Treasurer	<i>Floyd F. McSpadden, M.D.</i>
Managing Editor	<i>Albert Carriere</i>

# Welcome Aboard!

We welcome the following new members into the fellowship of CAMA.

Frank Anders, M.D.  
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# NEWS OF MEMBERS



**Astronaut Story Musgrave**

Dr. Story Musgrave, CAMA Life Member and NASA Astronaut for 22 years, will make his third journey into space this August. The mission, STS-33, will be on DISCOVERY. Story deployed the first IUS/TDRS satellite and performed the first shuttle spacewalk during the maiden voyage of Challenger in April, 1983. His second flight, also on Challenger, and designated Spacelab #2, was in July 1985, and involved the operation of an astronomical observatory carried in the shuttle cargo bay.

★ ★ ★ ★ ★ ★ ★ ★

After 30 years of service in Papua, New Guinea, CAMA member Dr. James (Jim) Jacobi was recently honored with a Knighthood by her Majesty, Queen Elizabeth II in the New Year's Honours List. Henceforth, Dr. Jacobi should be addressed as: Dr. Sir James Jacobi, Kt., OBE, M.D. B.S., Phc.

★ ★ ★ ★ ★ ★ ★ ★

Dr. M. Young Stokes III was recently elected a director of the Silver Anniversary Fraternity, an organization of people who have been flying for more than 25 years.

★ ★ ★ ★ ★ ★ ★ ★

Dr. Robert L. Wick, Jr., CAMA Past President, was recently elected Chairman of the Air Transport Association Medical Panel, the industry organization for the United States Air Carriers.

★ ★ ★ ★ ★ ★ ★ ★

CAMA Past President, Dr. Robert S. Poole, is the new American Airlines Area Medical Director for the Eastern Division, headquartered in New York City.

★ ★ ★ ★ ★ ★ ★ ★

Al and Harriett Carriere have just completed their second decade of service, as Secretariat, to the Civil Aviation Medical Association.

★ ★ ★ ★ ★ ★ ★ ★

Dr. Milton Gordon, our man in Jerusalem, sends Shalom from the Holy Land. At age 77 he is retiring after 15 years as Civil Air Surgeon for the State of Israel. Milt still lectures at the Flight Surgeon's Seminar for the Israel Air Force, and is a member of the Aviation Appeal Board. He looks forward to attending the London meeting in September.

Representatives from 20 countries attended a Regional Civil Aviation Medicine Seminar held in Bangkok, February 20-24 1989, and sponsored by ICAO. The following CAMA members were present: Dr. George Takahashi, Ottawa, Canada; Dr. Steve Blizard, Nepean, Ontario, Canada; and Dr. Silvio Finkelstein, Montreal, Canada.

# HIDDEN HEART DISEASE

by

James A. Sbarbaro, M.D., F.A.C.C.\*

Many patients with cardiovascular abnormalities present with clear and unequivocal symptomatology. Breathlessness, chest pain, palpitations, and syncope provide valuable clues in the search for the underlying etiology of these cardiovascular complaints. However, in recent years attention has been focused on a large group of patients with significant cardiac disease and no symptoms. Within this population are many individuals destined to undergo sudden cardiac death as the first manifestation of cardiac disease. In fact, it has been estimated that as many as 25% of the approximately 600,000 people who die suddenly in this country every year of cardiac disease have sudden death as their first warning of a cardiac problem. Accordingly, this monograph will focus attention on the most common forms of hidden heart disease and methods which the practitioner may utilize in screening the asymptomatic population for these disorders.

I believe the easiest way to understand this complex subject is to group patients into two large categories of hidden heart disease, *congenital* and *acquired*. Congenital forms of hidden heart disease include congenital abnormalities of the coronary arteries, the various forms of hypertrophic cardiomyopathy, Marfan's Syndrome, the Wolff-Parkinson-White Syndrome, and the Idiopathic Long QT Syndrome. Congenital abnormalities other than those of the coronary arteries will not be discussed here as the presentation of those entities is usually not silent.

With regard to acquired forms of hidden heart disease, we in essence are dealing with coronary artery disease and silent myocardial ischemia. Since it is estimated that silent myocardial ischemia may be present in as many as one to two million Americans, we will give considerable attention to this problem.

**Coronary artery anomalies** (the case of Pete Maravich is a recent reminder) can account for sudden death in young people. Anomalies such as a single coronary artery, take off of the left main coronary artery from the right coronary cusp, and take off of a coronary artery from the pulmonary artery are conditions which can cause chronic silent myocardial ischemia and sudden death. At autopsy, the heart of Pete Maravich was large and fibrotic suggesting multiple episodes of myocardial ischemia in the past.

Detection of these individuals continues to be difficult since chest pain in young active people is

often dismissed as musculoskeletal or psychosomatic. Clearly, any young person with a typical history of exertional chest pain deserves further attention and possibly stress testing. However, in many of these individuals symptoms are transient, not thought to be important by the patient, and therefore unreported.

**Hypertrophic cardiomyopathy**, when one excludes young individuals who die suddenly of coronary atherosclerosis, accounts for the largest percentage of young patients dying suddenly. This congenitally inherited abnormality of cardiac muscle often disproportionately thickens the intraventricular septum, although abnormal myocardial cells can be present in other myocardial locations, or even diffusely. Patients often present with fatigue, dyspnea, chest pain, or syncope. Any of these complaints, especially in a patient with a systolic ejection murmur, should prompt further cardiovascular evaluation. Careful auscultation, employing the valsalva maneuver, can often help determine the etiology of a systolic murmur in the young. Palpation of the PMI and carotid artery impulse are often helpful in this assessment, with the rapid rise in ventricular pressure and mid-systolic dip in pressure (with obstruction) giving the characteristic double apical or carotid impulse. Echocardiography is invaluable in further studying these patients and is recommended when the clinical suspicion of hypertrophic cardiomyopathy with or without left ventricular outflow tract obstruction is present. Treatment include beta blockers, calcium blockers, and in rare cases, septal myectomy. However, while symptoms may be improved by these maneuvers, the incidence of sudden death is not altered. Clearly such individuals, if hypertrophic cardiomyopathy is documented, should be prohibited from engaging in extremely strenuous activity.

Although patients with typical **Marfan's Syndrome** are easily detected clinically, very often significant abnormalities of the aortic root and aortic valve may be present in patients without the typical physical stigmata of this disorder. Once again if there is any suggestion that Marfan's Syndrome is present, an echocardiogram is invaluable in the further evaluation of the patient. The tragic case of Flo Hyman, whose sudden death on the volleyball court was a complication of Marfan's Syndrome, serves to illustrate the occasional lethality of this condition.

Finally, the **WPW** and the **Long QT Syndromes** can be responsible for hidden heart disease and sudden death. Patients with atrioventricular bypass tracts having very short refractory periods may be at risk of sudden death when atrial fibrillation develops, since the short refractory bypass tract may allow the conduction of three to four hundred impulses to the ventricle causing ventricular fibrillation. Obviously,

resting electrocardiograms are done infrequently in otherwise healthy individuals and this condition will prove difficult to diagnose. If an EKG pattern consistent with WPW or the Long QT Syndrome is seen, cardiovascular referral is recommended.

A great deal of emphasis in the cardiology literature in the last few years has been directed towards the syndrome of **Silent Myocardial Ischemia**. It is now clear that as many as 80% of all episodes of myocardial ischemia are silent and not appreciated by the patient. Whether this is due to defective neural pathways, a critically small mass of ischemic myocardium not leading to sufficient stimulation of pain fibers, or some as yet unrecognized factors is unclear, but the fact that the syndrome exists and is clinically important has now been verified in multiple studies. Using objective techniques such as myocardial perfusion imaging, regional wall motion studies, and the measurement of lactat production by the myocardium, it is now clear that significant and even life threatening myocardial ischemia may exist without symptomatology. Clearly in patients with known coronary disease, silent ischemia is common. Fortunately this almost always responds nicely to treatment with either long acting nitrates, beta blockers, or calcium antagonists.

How is the practitioner to evaluate the postulated one to two million individuals in this country who are completely asymptomatic with silent ischemia? I believe that the most reasonable approach is one which utilizes cardiac risk factors as a preliminary screening technique for further evaluation. I have listed below what I consider to be the major risk factors for development of coronary disease in our population, and I would recommend that any individual over the age 35 with two or more of these risk factors undergo multistage exercise testing.

- Male Sex
- Family History of Premature Coronary Heart Disease (Definite MI or Sudden Death Before Age 55 in a Parent or Sibling)
- Cigarette Smoking
- Low HDL Cholesterol Concentration (< 35 mg/dl)
- Diabetes Mellitus
- Hypertension
- Presence of Cerebrovascular or Peripheral Artery Disease
- Sever Obesity (More Than 30% Overweight)

While this may appear to be a huge and costly undertaking, it is clear to me that the state of the art in cardiovascular medicine is clearly moving in this direction as we begin to appreciate the magnitude of the silent ischemia problem. In fact, there have been several lawsuits filed by relatives of patients suffering sudden cardiac death who had previously visited

their physicians with multiple coronary risk factors and not been stress tested. Thus, cardiologists are recommending stress testing for all individuals over the age of 35 with two or more coronary risk factors as outlined above. If the stress test is completely within normal limits, further evaluation is not necessary. What, however, does one do with a stress test which shows significant ST depression in the absence of symptoms, and furthermore what is the appropriate next step in patients with borderline or equivocal studies?

It now appears that radionuclide testing either with thallium 201, or gated blood pool imaging with technetium pyrophosphate is the next appropriate diagnostic step in the subgroup of patients with multiple coronary risk factors and positive or equivocal stress findings. Patients whose radionuclide studies are positive should be referred for coronary angiography, but if the nuclear studies are negative, risk factor control and close clinical observation would be most appropriate.

What about ambulatory electrocardiographic recording with ST segment monitoring in the management of such patients? It is my feeling that this is basically a research tool at present which has been to be shown of value only in assessing patients with known coronary disease. Thus ambulatory holter type recordings are not of particular value in the screening of individuals for silent coronary disease or for the management of the average patient with this condition. This I believe is true because the ischemia detected in patients by ambulatory EKG monitoring is almost always detected on exercise stress testing. In fact, it is almost always the case that the only patients who have frequent and prolonged episodes of ischemia during ambulatory monitoring have ischemia induced at low levels of exercise during stress testing; patients with no ischemia changes during exercise or ischemia only at high levels of exercise rarely have silent ischemia during ambulatory monitoring. Thus the routine use of ambulatory EKG monitoring to document the presence of myocardial ischemia in patients with chronic stable angina provides little additional information beyond that derived from stress testing.

Nonetheless, we should not take ischemia lightly in patients with coronary disease. Clearly, the presence of ischemia is a negative prognostic factor in these patients. Effective pharmacologic and revascularization strategies now exist to render all our patients with silent or overt coronary disease ischemia free.

In summary, hidden heart disease continues to be a clinical challenge. If symptoms suggestive of myocardial ischemia (such as chest pain or heaviness, undue breathlessness with exercise, or any anginal

equivalent type symptoms) are present then multi-stage exercise testing is appropriate. As mentioned above, patients over the age of 35 with two or more coronary risk factors should undergo stress testing, with nuclear studies either of the perfusion or gated blood pool type reserved for those with positive or equivocal studies. Echocardiography should be utilized in patients with histories and physical examinations consistent with hypertrophic cardiomyopathy, valvular heart disease or the Marfan's Syndrome. Cardiology and possibly electrophysiologic referral is important in patients suspected of having WPW or the Long QT Syndrome. Myocardial ischemia, if detected, should be treated aggressively with aspirin,

long acting nitrates, calcium blockers and beta blockers to minimize long term morbidity and mortality in this condition.

*\*James A. Sbarbaro, M.D., F.A.C.C. received his M.D. degree at the University of Pennsylvania. He is Clinical Instructor in Medicine at the University of Colorado Health Sciences Center, Denver, Colorado. A member of the American College of Physicians, a Fellow of the American College of Cardiology, he is also a Diplomate in Internal Medicine and Cardiovascular Disease, American Board of Internal Medicine.*

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## **HONESTY, Are We Really Totally honest?**

Every one of us takes pride in being honest and having a reputation as an honest person. We have more respect for our 'honest' colleagues and associates and our children. But is this 100%? Have you ever complimented someone on an accomplishment or a new article of clothing just to avoid hurting someone's feelings, even though you really did not think a compliment was deserved? Have you ever added or subtracted a little from the actual when asked about your age or height or weight or speed or car mileage? Surely most of us have at some time or another given in to such temptations with the rationalizations that it really didn't matter. Compromise a little when "it wouldn't hurt anyone or anything." But this is not true, for it hurts the individual. Any misrepresentation can make the next a little easier, so where do we draw the line? How many parents have asked children to help watch for law enforcement officers when driving a little faster than the speed limit? After a few years these same parents fuss at the same children when the child "drives a little too fast." We need not go out of our way to be brutally blunt hurting others, but sometimes it is really better to say *nothing*. I often tell my patients and their families that I will not hide the truth from them concerning their

health, no matter how unpleasant the results may be. Once any person, and more especially a patient, learns they have been given untrue information, they can never again trust the person as totally and completely as before. Initially, almost all of us tend to believe any person with whom we come in contact until or unless something is found untrue. Next we may overreact and tend to distrust almost everyone. Such distrust may be channeled toward a sex, an age group, a religious group, an ethnic group, or others. Not that such is justified, but we felt put upon or our feelings were hurt. All of us are very familiar with the way our laws or rules change. This makes us suspicious of our governmental representatives and those of nations other than our own. Peace and progress are NOT built on distrust. Regardless of past experiences, we must become more trusting and also more trustworthy and honest. As we look ahead to meeting with our colleagues and members from many nations, let us work together in honest harmony.

M. Young Stokes III, M.D.  
President, CAMA