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Australian Military Medicine Association

AMMA Newsletter

Volume One / Number Three / November 1992

The First AMMA Conference voted great success

The first AMMA Conference which took place in Melbourne 8 - 9 August 1992 and was considered by all to be a resounding success with an attendance of well over 100 members at the St Frances Xavier Cabrini Hospital. The retiring Surgeon General and first patron of AMMA gave an oration to the attending members which is included unedited below in the current newsletter. The conference organisers were given the generous support by two sponsors Bristol Myers Squibb and the Cabrini Hospital. Bristol Myer Squibb made the conference possible by their provision of funds to subsidise the dinner, printing of abstracts and miscellaneous expenses. While Cabrini Hospital made their auditorium available as a conference venue at no cost. The conference would not have gone ahead without the untiring efforts of AMMA Vice President Nader Abou-Sief, Surgeon Captain Peter Habersberger and of course our hardworking President Squadron Leader James Ross. Lieutenant Colonel Wettenhall Trustee for the Third Military District Medical Officers' Trust Fund advised the Annual General Meeting at the First Conference that funds would be made available for setting up a journal for AMMA.

Surgeon General's Oration to Inaugural AMMA Conference

As patron of AMMA, I would like to thank you for the opportunity to give the opening address at the first AMMA conference. A forum such as this is unique and long overdue. It brings together those with an interest in military medicine as well as providing information and communication, fellowship and friendship. It also provides a cornerstone to promote and maintain high standards of scholarship in military medicine. I foresee only positive effects for the health services personnel of the ADF and, through —them, for the ADF as a whole.

I would like to reinforce the importance of the continued development of academic and professional links with the civilian health community, ensuring that the discipline of military medicine in Australia continues to grow, with reciprocal benefits for the ADF Health Services. The ADF Health Services has planned to foster its involvement with various professional colleges and associations, including for example the College of Physicians and the College of General Practitioners. Other long term aims should include the development of a masters degree in military medicine that could form part of a recognised training program.

Not only do I support and encourage links

with august bodies such as the professional colleges and associations to which many members of the ADF Health Services. These members either active in the regular or reserve forces, or through an association with the ADF, contribute to and promote the ideals of the AMMA. The contribution of all ranks should be encouraged and fostered and I believe this important task demands the time and energy of our president and his committee.

I can see program that there is a wide array of presentations. This will provide an awareness of the scope of the disciplines of military medicine and meet the conference objective - Namely giving association members an appreciation of current trends in military medicine, as well as an historical perspective.

I recall that one of the suggested topics for presentation was the current status of operational health strategies. Indeed it is pleasing to see that we will hear first hand, the experiences of some of our members who have been operationally deployed overseas.

From the operational perspective things have been very busy over the last two years. In addition to the gulf deployment, ADF Health Services personnel have been deployed with United Nations teams, being involved in a range of tasks which have included humanitarian assistance provided during operation Habitat, Disaster relief both in Australia and the South West Pacific, and major combined and Joint exercises such as Kangaroo 92.

The ADF continues to provide a significant complement of Health Services personnel in

Cambodia and a lesser complement in the Western Sahara. We have also had a more or less continuing commitment in support of ships deployed on sanction enforcement operations in the northern Red Sea, and an irregular, but important role in providing specialist medical advice and support to the UN Commission for the destruction of weapons of mass destruction in Iraq. Before I examine these aspects, I would now like to briefly elaborate on health planning at the strategic and operational levels.

The strategic health planning process has developed substantially in the last two years. This has been a result of the establishment of the Surgeon General Division within HQADF following the Sanderson review, and, equally importantly, the unique opportunity that recent ADF operational involvement has provided to practise planning at the strategic level.

The benefits that have resulted from the establishment of a discrete, credible and responsive source of advice on operational health support at the strategic level cannot be over-emphasised. That advice is not filtered through the personnel or logistic functions. In the case of operation Damask, it was provided directly to the Prime Minister. That advice is now readily sought and has been reflected both in the deliberate and contingency planning processes. To anybody who would like to pursue this, I suggest you examine the health support content of Commander Defence Force or Headquarters Australian Defence Force operational directives, operation orders or directives, and Australian Joint Service Plans (AJSPS) issued during the last two years. Other

nations involved in many of these operations have actively sought our advice and assistance on a range of health issues, health intelligence being a key element of this.

At the operational level, health planning has been markedly enhanced by the formation of the Joint Health Planning Group (JHPG). This group includes the senior health officers representing the three joint commands (Maritime Headquarters, Land Headquarters and Land Headquarters). Representatives from Surgeon General ADF and other agencies may also be invited to participate as necessary. The JHPG ensures optimum health support to ADF joint operations and maintains a technical link between the health elements of the three commands.

The JHPG coordinates health support plans for joint operations at the operational level. The senior health officer of the command assigned the joint force task, will normally chair the JHPG and become the principal point of contact with SGADF. The chairman of the JHPG also maintains interface with the joint operational planning group / joint administrative planning group as appropriate, and consults with SGADF on the technical and professional aspects of the health support plan for the joint force.

Doctrine for strategic level health planning is now well established in joint and combined doctrine in the following publications:-

- A. The ANZUS Planning Manual;
- B. JSP 9 'Joint Operations; and
- C. JSP 53 ' Health Support in joint Operations.

The last publication (JSP 53) provides comprehensive joint doctrine for operational health support for the first time. It should be issued by the end of the year. We hope that it is not long before we teaching that doctrine at a joint operational health support course at the ADF Warfare Centre at Williamtown.

Now a brief review of recent operational experience. Operational Damask has been the Australian contribution to operations in the gulf. As I indicated earlier, this has been an ongoing commitment as sanction enforcement operations continue. Apart from the medical compliment aboard, the RAN units participating, our key contribution was the provision of medical teams aboard the USNS Comfort. While we are indeed fortunate that casualties during the ground war were much lighter than anticipated, had circumstances been otherwise, the afloat medical capability provided by vessels such as the comfort, the Mercy and the Argus would have been crucial.

Now to Operation Habitat. Rather than steal the thunder of Major Little, may I simply remind you that the operation involved an ADF Health Services Team being deployed to Kurdistan to provide relief to refugees.

Significantly though, the operation highlighted the utility of military medicine in the changed global strategic circumstances in which we find ourselves after the cold war.

Our recent experiences with the United Nations indicate a new direction in military medicine. The success of these missions in health terms is dependent on a number of factors - the most important of which is the calibre of the health services personnel

deployed and their training. The support systems in place in Australia, SGADF health policies, health intelligence and clinical advice for the area also contribute to the operational efficiency of deployed units, and, finally the overall UN medical cover needs to be considered.

ADF contingents have been deployed to areas where the existing health infrastructure is primitive and poorly developed. Water supplies have been limited in both quality and quantity. The regions have historically had a high incidence of severe endemic diseases for example malaria, Japanese encephalitis and rabies. These situations provide a challenge to any medical team, especially with the additional factors of isolation, troop stress and the possible ambiguity of the peace keeping role. There is also the very real prospect of combat casualties - especially in Cambodia.

Kangaroo 92 provided extensive scope to exercise the ADF health services. Functions exercised included joint health planning, health support for force preparation and deployment, provision of health support in both the joint force area of operations and the support area and command and control of health support. A number of very useful recommendations came out of the exercise. and action is in hand to implement them. One of the interesting features of the exercise was the trial of an ADF battle casualty simulation system which was based on cards incorporating wound photographs and descriptions. Aside from the training value of these cards, they proved to be such a popular item that out of the 1400 cards distributed for

the exercise, only 200 have been returned. Plans are under way to upgrade and expand the system, with the long term goal of making the cards widely available for individual and collective training within the ADF.

Other Activities

The SGADF seminar has become an annual event. It is a forum in which ideas can be raised in frank and free discussion. These meetings help to extend the degree of cooperation already existing within the ADF health services.

SGADF health policy directives were introduced following the first SGADF seminar. They provide a unified source of health policy guidance and advice for the ADF. To date, 29 health policy directives have been published and another 10 are at the draft stage. Our health policy directive on malaria chemoprophylaxis has been adopted by United Nations personnel.

The identification of a range of positions within the ADF health services suitable for exchange postings between the services has been completed. The implementation of the program is now the responsibility of the single service Directors General. This program will hopefully also extend the degree of cooperation already existing within the ADF health services.

SGADF Division has recently been restructured to include the Directorate of Health Records Information Systems. A subsection of this is the health systems redevelopment project. The project's intent is to replace the present single service health

record and information systems with a common tri-service system.

More recently, the responsibility for occupational health and safety has transferred from ACPERS to SGADF. SGADF is now responsible for the development and coordination of occupational health and safety policy for the ADF.

Many of you will be aware of the ADF Health Centre at Holsworthy. The ADF elements which the new facility would incorporate are the tri-service training school, 1st field hospital, the Army Malaria Research Unit and the Pathology Central Reference Laboratory. As an interim measure, army has been appointed as the single service manager for tri-service training currently to be conducted at Portsea.

Assistance in the development and coordination of a National Counter Disaster Plan utilising ADF resources.

The current series of JSPS sponsored by SGADF division have been revised new JSPS are being developed. Recent developments in the 700 series (The Medical Series) of JSPS include blood banking methods and blood transfusion. The first draft of JSP 53 ' Health support in joint operations' has been written and is currently with the ADF Warfare Centre. A comprehensive document such as this more than adequately rectifies the previous deficiency of appropriate published joint health services doctrine and will direct planning procedures in the future.

Other publications sponsored by the SGADF

Division include the Therapeutic Index - A total rewrite and reissue of the 1985 Edition. Health Handbooks for service men and service women, health handbook K92 and input into soldiers handbooks for Northern Iraq, Western Sahara and Cambodia. Interestingly, the health information contained in the soldier's handbook developed for Cambodia has been directly incorporated into the United Nations joining instruction for participants from all countries. The Therapeutic Index is currently being amended to include the cross referencing of the Australian generic with the therapeutically equivalent items in the United Kingdom, United States and Canada catalogues. Operationally, this will be invaluable in terms of resupply, availability of urgent items and cooperation between UN medical teams.

As you can appreciate this is just a broad overview of things that have occurred recently in SGADF Division and the ADF Health Services. To try to cover all our activities would take up most of the morning. As some of you know I am rapidly approaching my 'use by' date in the ADF and will be leaving the service at the end of September. I leave my position as Surgeon General and Patron of AMMA secure in the knowledge that we have a very strong foundation to build upon and I wish the AMMA and all its members every success.

History of Biological Warfare

by LCdr Andrew Robertson

Biological warfare dates back at least 2000

years. Whilst dead bodies were often dropped in wells to contaminate the water supplies of enemies, the first major military use of biological agents was in 190 BC in the Battle of Eurymedon. Hannibal won victory over King Eumenes of Pergamon by firing earthen vessels full of venomous snakes into his ships. This was probably the first use of toxins. In 673, Fioravanti of Boronia, expanded on this by constructing bombs containing human faeces and blood.

In 1343 the city of Caffa (now Feodosia) on the Crimean Coast, a Genoese stronghold, came under siege by the Mongols. The siege held for three years. In 1346, 'Black Death', which had travelled down the 'silk road' from China, affected the Mongol 'Golden Horde'. The Mongols, losing many to the infection projected their mountains of dead over the walls into Caffa. The resulting plague, the Christians gave up the city. Fleeing by ship, they brought the plague to Sicily and Italy and assisted in its introduction into Europe.

Varillas describes another episode in 1422 when Corbut, in his siege of Carolstein, had the bodies of his killed troops and 2000 cartloads of excrement catapulted over the wall. Although the siege was unsuccessful, many defenders died from disease.

Similarly, in 1710, Russians besieging
Swedish troops at Reval threw bodies of
plague victims over the wall. In America, in
the French and Indian Wars of 1763, Sir
Jeffrey Amherst, British commander in chief
suggested to Colonel Henry Bouquest that
Indians be given smallpox. Bouquest
proposed to do this through inoculating

blankets with smallpox from the smallpox hospital at Fort Pitt. Although no further letters followed, by the following spring (1764) smallpox was raging among the Indians.

In 1865, Dr Blackburn, a Confederate surgeon, was tried for attempting to import yellow fever contaminated clothes into Northern parts of America. The outcome of his trial is not known.

In 1925, at Geneva, a number of countries signed the Protocol for the prohibition of the use in war of asphyxiating, poisonous or other gases and of bacteriological methods of warfare.

In 1932, a Japanese Army major, Shiro Ishii, returned home from a European tour convinced that biological weapons were an effective means of fighting a war. He commenced work on biological warfare at the Harbin Military Hospital in Japan but soon moved to an isolated spot in Manchuria. The site chosen was near a small village called Pingfan, 40 miles south of Harbin. By 1939, Ishii was a general and Pingfan Institute had a garrison of 3000 scientists, technicians and soldiers and was completely self-supporting. Research was carried out into many agents including typhus, typhoid, anthrax, plague, botulism, tularaemia and glanders. Bombs were prepared for distribution of these agents. These included Uji bombs for anthrax; Ha bombs - fragmentation anthrax bombs and Fu or Balloon bombs for distributing cholera and typhoid. The Japanese infected prisoners with the various agents and carried out vivisection without anaesthetics. There is also good evidence that the Japanese dropped plaque

infected fleas in attacks on Chuscen and Changteh in China in 1940-41 with some success. After the war, those involved in the unit captured by the Russians were tried for war crimes. Those captured by the Americans, however, were spared.

Research was also carried out by the Allied forces during World War II. The British experimented with Anthrax as an aerosol on sheep on Gruinard Island off the north coast of Scotland. The island remained contaminated for many years and has only recently been cleaned up. Anthrax filled cattle cakes were made at Porton Down for aerial dissemination over Germany but were never used. Similarly, under Sir Fredrick Banting's direction, anthrax was also prepared for offensive use by Canada. The United States also commenced research into biological agents at Fort Detrick.

In May 1942 Reinhard Heydrick, Hitler's head of security, was assassinated in Operation Arthropod. This was apparently by British trained Czechoslavakian agents using a grenade loaded with botulinum toxin.

Although his wounds were minor, he succumbed a week latter in hospital. This is his Merecedes after the attack and a duplicate grenade also found at the site. In retaliation, the Nazi's levelled Lidice and killed over 3000 Czechoslovaks over the following months.

Post war, biological warfare research continued in both eat and west. Accusations were made about the use of biological agents in both Korea and the Vietcong in Vietnam - with little substantial proof. The Americans had weaponised a number of agents including

anthrax, tularaemia and VEE. President Nixon stopped the United States biological warfare offensive program in 1969. In 1972 the Biological Weapons Convention was signed, banning the use of biological warfare weapons.

On 7 September 1978, Georgi Markov, an exiled Bulgarian writer, drove to his work at the BBC. Parking his car beneath Waterloo Bridge, he was climbing the steps to the road above when he felt a sharp jab in the thigh. Turning, he saw a man picking up an umbrella, mumbling apologies. That evening he developed a fever and hypotension which increased over the next two days until his death. The forensic scientist found a tiny pellet with holes drilled into it. They suspected poison but were unsure of the type. The clue came when Kastov, another exile in Paris. after reading of Markov's death, remembered a recent pain in his back and fever. A thorough examination revealed another pellet showed traces of Ricin. Kastov had only survived because the assassins failed to use enough Ricin.

In 1979, in Svedlock in Russia, there was a large outbreak of anthrax. Controversy still rages about the event. One school of thought says it was an outbreak of gastro-intestinal anthrax from infected meat sold on the black market. Another view was that it occurred due to an explosion at a Soviet biological warfare facility. That an accident occurred at such a facility has been more recently confirmed by Boris Yeltsin.

In 1990, Iraq invaded Kuwait. They were expelled from Kuwait in early 1991 and United Nations Inspection Teams inspecting in mid-

late 1991 found evidence of a research into biological warfare agents.

Biography

of

LCdr Andrew G. Robertson RAN
MB, BS, Dip DHM, Grad Dip OHS, MPH,
FAFPHM

Andrew Robertson was born in Gundagai in 1959. He did his secondary schooling at The Scots College in Sydney before graduating MB BS from the University of Sydney undergraduate and after completing two years of residency at the Royal Prince Alfred Hospital, he commenced work full time with the RAN in 1984. He saw service at the RAN hospital HMAS Penguin, on the guided missile frigate HMAS Canberra on South East Asian deployment, on the guided missile frigate HMAS Sydney on Indian Ocean deployment and at the sickquarters, HMAS Stirling, Western Australia. In 1987, he spent six months in the United Kingdom and the United States receiving advanced training training in underwater and hyperbaric medicine. On return to Australia, he was awarded the Diploma of Diving and Hyperbaric Medicine in December 1988 and the Graduate Diploma of Occupational Health and Safety from Curtin University of Technology in December 1989. He was also awarded the Alumni Medal as best postgraduate student for 1989. In 1990, he joined HMAS Parramatta for a South East Asian deployment as the Deputy Fleet Medical Officer. In the second half of 1990 he completed his completed his MPH before taking over as Command Medical Officer /

Senior Medical Officer at HMAS Stirling. He was awarded his fellowship of the Australian Faculty of Public Health Medicine in December 1990. He was posted to Deputy Director Medical Services - Navy in April 1992.

Lieutenant Commander Robertson is presently undertaking Advanced Training in Nuclear, Biological and Chemical Defence Medicine. He is also undertaking a Master of Health Administration part-time.

Lieutenant Commander Robertson is married to a Laura, and they have two children, Katherine and David. They presently live in the Canberra suburb of Isaacs. His interests include walking, reading, calligraphy and travel.

List of New Members.

Dr G.L. Baro

Dr A.J. Bond

Surgeon Lieutenant G.H. Burrow

Dr G.P. Deleuil

Dr G.J. Davison

Dr A.C. Garnham

Dr J. Govino

Dr. J.M. Ireland

Lieutenant N.J. Leeks

Colonel D.R. Leslie

Squadron Leader A. Perina

Squadron Leader K.E. Palmer

Dr D.A. Prentice

Squadron Leader M.V. Samuel

Captain J.V. Rosenfeld

Group Captain D.P. Senior

Squadron Leader M.W. Skinner

Lieutenant Colonel J.B. Swann

Lieutenant M.C.G. Terry Lieutenant Colonel C.C. Varley

An Ultrastructural
Evaluation of the
relationship between
Epithelial Rests of
Malassez and
Orthodontic Root
Resorption and Repair in
Man

by
Captain G.L. Brice RAN etal
BDSc (Qld), MDS (Adel)

Australian Orthodontic Journal. Vol.12.No.2.pp90-94.

Contrary to previous reports, epithelial cell

clusters with ultrastructural features similar to classically defined epithelial rests of Malassez were found, for the first time, in areas of repairing orthodontic root resorption. These observations were made on the buccal root surface of premolars extracted for orthodontic purposes from adolescent patients who had required rapid maxillary expansion. Ultrastructurally, the epithelial clusters ranged in size from 2 - 8 cells and were characterised by the presence of true desmosomes (macula adherens) and tonofilaments. Certain ultrastructural features of the epithelial cell clusters indicate that they may be involved in mediating repair cementogenesis subsequent to migration into the resorption bay.

Beneficial Effects of Hyperbaric Oxygen Therapy in *Nocardia* brasiliensis Soft-Tissue Infection

by Surgeon Lieutenant R.M. Walker RAN etal MB BS

Medical Journal of Australia. Vol.155.July 15.1991.pp122-123.

Objective

To report the success of hyperbaric oxygen therapy in the treatment of *Nocardia Brasiliensis* mycetoma. We believe this to be only the second report in the medical literature of hyperbaric oxygen therapy used in the therapy of nocardial disease.

Clinical Features

A 78 year old man presented to a general hospital outpatient clinic after eight months with a painless swollen left foot. There was no significant medical history, no trauma had occurred, and no foreign body had been detected. The dorsum of the foot had a discharging sinus, from which N. brasilienis was isolated.

Interventions

After unsuccessful treatment with surgical debridement and high-dose antibiotic therapy was administered in a multiplace recompression chamber (one hour of treatment at 1.8 atmospheres absolute followed by a 30 minute "ascent" to surface pressure). A total of 19 treatments were administered.

Outcome

Successful healing of an N. brasiliensis mycetoma of the left foot.

Conclusion

In this case of N. brasiliensis mycetoma involving the lower extremity, the conventional treatment of surgery and antibiotic therapy was unsuccessful, and only with the addition of hyperbaric oxygen therapy did clinical recovery occur.

Health Service Support in Operations Desert Shield and Desert Storm

by P. Cardinal

Military Medicine. Vol.157.No.4.1992.pp175-179.

Operations Desert Shield and Desert Storm have brought into focus a number of difficulties with the medical support of United States Army tactical forces. These difficulties include inadequate medical training of field medical unit personnel and problems in utilising available equipment to support Operation Desert Storm tactical operations. This discussed these difficulties, and some unresolved issues created by or despite these potential solutions.

Gulf War Audit

An analysis of Medical
Casualties Evacuated to the
United Kingdom from the Gulf
during Operation Granby

by

T. Hodgetts and G. Ratcliffe

Journal of the Royal Army Medical Corps.

Vol.138.No.1.pp9-13.

The 61 personnel, 60 male, evacuated from the Gulf to Queen Elizabeth Military Hospital on medical grounds between late October 1990 and mid-March 1991 are reviewed with particular regard to previous medical history, previous medication and appropriate PULHEEMS grading. The percentage evacuated was 0.24% of Army personnel involved in Operation Granby which is considered acceptably small.

Academic Military Medicine

The Uniformed Services University of the Health Sciences, USA

It is interesting to see how other Defence
Force Health Services do business and train
their personnel. Th Uniformed Services
University of the Health Sciences (USHS) is a
case in point. It was established by the US
Congress in 1972, and is located in the
grounds of the Naval Medical Command,
National Capital Region, Bethesda, Maryland.
The campus is close to several federal health
facilities, including the National Institutes of
Health, the National Library of Medicine, the
Walter Reed Army Medical Centre, the Armed
Forces Institute of Pathology and the Armed
Forces Radiobiological Research Institute.

The medical student enrolment for the 1986-87 academic year was 642 and the graduate student enrolment was 105 for that year. The graduate program at USHS is fully accredited by the Commission on Higher Education of

the Middle States Association of Colleges and Schools. The graduate programs in Preventive Medicine are also fully accredited by the Council on Education in Public Health.

The graduate programs are conducted in facilities on the campus of the University and at such other locations as may be indicated. Well-equipped modern laboratories support the tropical medicine program. The affiliated teaching hospitals in the Washington area are the Walter Reed Army Medical Centre, the National Naval Medical Centre and the Malcolm Grow Air Force Medical Centre each of approximately 1000 beds. There are several affiliated overseas institutions including the Navy Medical Research Unit, Cairo, Egypt; the US Army Component of the Armed Forces Research Institute of Medical Science, Bangkok, Thailand; and the Pakistan Army Medical College, Rawalpindi.

It is difficult for those of us who have not visited such institutions to grasp the size or scope of such a military health service which provides for from the cradle to the grave medical care for all Defence personnel, dependents and the US community. It is the aim of the association to pursue the objective of a centralised academic teaching facility on a more modest scale which would provide the range of military health services training from

medics to senior health services officers. It would need to be collocated with a clinical centre and attached to a university in a similar manner to the way ADFA has a relationship with the University of New South Wales. This would be in accordance with the policy stated by the previous SGADF. It would require the endowment by the ADF of a chair of Military Medicine. This academic department would form the nucleus for a centre of excellence in the area of Military Medicine within Australia. It would not only embrace the profession of medicine but would include positions for other health services personnel including dentists. nurses, pharmacists, physiotherapists, psychologists and advanced medic training. The department of Military Medicine would conduct applied research into health care in the ADF in war and peace. It would include in it the existing specialty institutions of the three services - the Army Malarial Research Unit. the Institute of Aviation Medicine and the School of Underwater Medicine. Each would continue in their respective campuses.

Or is it just an unachievable dream of a few idealists? I think not. I believe it is an achievable goal in the near future. This idea of an academic department of Military Medicine deserves the widest discussion within the association and with the ADF Health Services. It offers so much to the ADF!