Following fortune's path

Tom Reeve

> Your position never gives you the right to command. It only imposes on you the duty of living your life so that others can receive your orders without being humiliated.
>
> Dag Hammarskjöld, UN Secretary-General, 1953–1961 awarded the Nobel Prize for Peace

I grew up in Canberra in the 1920s and '30s, then, as now, a planned and favoured town awash with politics, politicians and public servants. Although interested in these dynamics, our caring, skilled family doctor was the person who most impressed me. John James FRCS was our community's quiet medical leader, later recognised through the John James Medical Centre, now part of Canberra's teaching hospital system.

My parents were typical of their time. My father had emigrated from Britain in his teens and served in France in World War I. He was a public servant with the Federal Capital Commission (which from January 1925 was responsible for the planning and development of Canberra). He had a vocational flair for amateur theatricals of music hall and comedy genre. My mother was a capable homemaker. We became aware of the Great Depression just about the time my sister was born. My parents combined to have our large yard supplement our pantry. Mother became a genius in food preserving with the Fowler Vacola steam preservation kit, providing a great variety of foods. As children, my sister and I had warm and strong emotional, social and aspirational support, but our choices for our futures were our own. My parents offered two aphorisms: "Hard work is not lethal" and "Loyalty and fairness are necessary for success". I have not found either to be wanting.

In choosing a career, medicine held no competitor for me, although I dallied momentarily with veterinary science. I experienced the grief of three of my school classmates succumbing to diseases that now rarely cause death: poliomyelitis, mastoiditis and diphtheria. Polio returned to the class several times, and, although not lethal, it was damaging beyond reason, both physically and psychologically. Polio, in particular, marginalised those it affected. I felt that more could be done to alleviate this unfairness.

"The effect of a teacher may be infinite"

My undergraduate days during World War II were spent at the University of Sydney and at St Vincent's Hospital, Darlinghurst. I commuted daily on the on-time "red rattler" (today we say "if only") and travelled between campuses on the tram. Hospital life as a student was immensely fulfilling, and I matured among competitive peers. Two of my tutors made these days particularly memorable: Justin Markell, the meticulous, kindly physician in outpatients, and Douglas Miller, later Sir Douglas Miller, who became a leader in neurosurgery and President of the Royal Australasian College of Surgeons. Both encouraged and taught a careful approach to physical examination, diagnosis and patient care. They provided a sound basis for my future clinical endeavours.

I became a junior resident at Marrickville District Hospital in 1947. At that time, 18 months to two years after graduation saw most graduates enter general practice. I also aimed to do so.

Marrickville Hospital was general practitioner oriented, with specialist honorary staff drawn from Royal Prince Alfred Hospital. These included role models like the late Sir Thomas Greenway, a charismatic, thoughtful and instructive physician, and Frank Mills, a friendly, insightful surgeon who had made his reputation in Changi and Sandakan in World War II. He visited his patients often and always left a dusting of his knowledge on the junior staff.

Looking further afield

After 18 months and still attracted to general practice, it was time to move forward. Two positions presented themselves: one for a medical officer on Macquarie Island, the most southerly point of Oceania in the Australian Antarctic Basin; and the second, for Medical Superintendent at Collinsville, a small coal mining town in north Queensland. My colleague Bob Allison and I applied for both and were interviewed together by the Antarctic pioneer, Phillip Law, in front of the dying embers of the log fire in the common room of the (old) University Club in Phillip Street, Sydney. Bob went to Macquarie Island and I to Collinsville. As the only doctor in town, I enjoyed 18 months of rich clinical experience. Post-term obstetric deliveries, head injuries, critically ill children, motor vehicle accidents and accidents involving horses all hastened my clinical maturity. I remember a young jackeroo with a perinephric abscess after a nasty horse-related accident. As we were stranded by floods at the time, a surgeon in Mackay took me through the operative steps by phone. All ended well.

The community was full of reliable, loyal Aussies with enormous hearts. They were openly friendly and had a great bank of skills, and gave their local doctor the comfort often absent today.

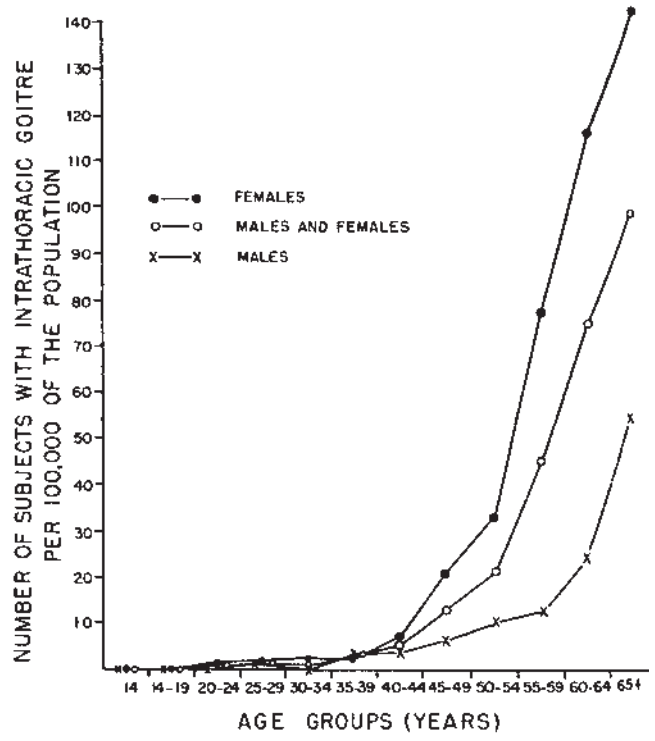
An outbreak of croup in some young children was the most formidable of my experiences. They desperately needed steam inhalation, but I was a little nonplussed as to how to supply it. One father spoke with his boss at the mine workshop, who rapidly produced a large galvanised watering can with four arms, each capped with a watering-can rose. Placed on a primus stove, this device effectively dispensed steam to four mosquito-netted cots simultaneously. Problem solved!

Surgeon by serendipity

I was no longer sure that I wanted to pursue general practice and planned to undertake postgraduate work in the United States. I applied for several positions and was appointed to a rotating

Australian Cancer Network, The Cancer Council Australia, Sydney, NSW.
Tom Reeve, AC, CBE, FRACS Emeritus Professor of Surgery, The University of Sydney, Senior Medical Advisor, Australian Cancer Network.
Reprints will not be available from the author. Correspondence: Emeritus Professor Tom S Reeve, PO Box 134, Beecroft, NSW 2119. treeve@med.usyd.edu.au

1 Age distribution of intrathoracic goitre detected by mass x-ray surveys for tuberculosis (1953–1956)



Source: Reeve et al[8]

internship at Albany Medical College, New York State. At my request, it included a term of psychiatry. I arrived to take up my appointment in 1950, just as the Korean War began. Given my previous surgical experience, I was promptly moved from psychiatry to surgery. The experience was life-changing. As the American surgical residents were drafted to Korea, I was promoted after six months, subsequently accepting the offer of five years' graduated surgical training in the Halsted tradition at Albany Medical Center. William Halsted had been Foundation Professor of Surgery at Johns Hopkins University in Baltimore, and laid the basis for graduated surgical training.

This proved to be five years of restricted finances, but top professional fulfilment and growth. My workday would start with 5.30 am ward rounds (before the chief arrived at 7.30 am), followed by a day in theatre, then admissions and lab work before falling into bed. How much more civilised work practices are today. I was embarrassed when my previous senior resident returned from Korea to be my junior, and his view "*c'est la guerre*" was most generous and the basis of a long friendship.

My training was predominantly in general surgery (with much exposure to thyroid surgery) and included my introduction to clinical investigation, which initially centred on bleeding varices and the monitoring of serum ammonia concentration.[1] A three-month exchange with the Women's Clinic at Johns Hopkins in Baltimore allowed me to work under the dynamic Richard Te Linde, Head of the Gynecology Department. Another privileged memory was witnessing the early development of cardiac surgery, as Alfred Blalock, under the watchful eye of cardiologist Helen Taussig, performed his "blue baby" procedure for tetralogy of Fallot and for alleviating the effects of congenital cardiac defects.[2] My final 18 months were spent in Albany in thoracic surgery at the time of its greatest development, as the pump oxygenator was introduced.

These five years were shared with a global workforce from 27 nations including Japan and Germany. The chiefs of medicine and surgery offered opportunity and education to all, hoping to heal wounds from World War II. This global experiment was clearly ahead of its time, and resulted in many firm international friendships. Being Australian was a significant plus, as Australia was popular after its Pacific role and genuine friendliness to US troops.

In 1953, I married Mary Jo, whom I met in the operating room at Albany Medical Center. She has been my loyal supporter and valued confidante since.

Return to Australia — spreading my wings

I returned to Sydney in 1955. Many doors were initially closed, but, with recommendations from mentors, I was eventually employed by Frank Rundle, Director of the Unit of Clinical Investigation at Royal North Shore Hospital (RNSH). After six months I received a full-time research fellowship with clinical responsibilities in my areas of interest, giving me the opportunity to be involved in thyroid surgery and studies; isotopes and cancer chemotherapy; a prospective database for thyroidectomy; and ultrasound of the breast.

Thyroid clinic: I worked with Rundle in his multidisciplinary thyroid clinic and helped develop an animal experimental facility. This brought me into contact with Ian Monk, a cardiothoracic surgeon, who, with a pump expert, Viv Ebsary, was exploring open-heart surgery.[3] The use of animals for experiments caused significant angst, especially when clandestine activity was required — such as transporting anaesthetised sheep by wheelbarrow to a ground floor angiographic facility for experimental studies. From such humble beginnings, the entire unit later evolved to become the Wellcome Laboratories.

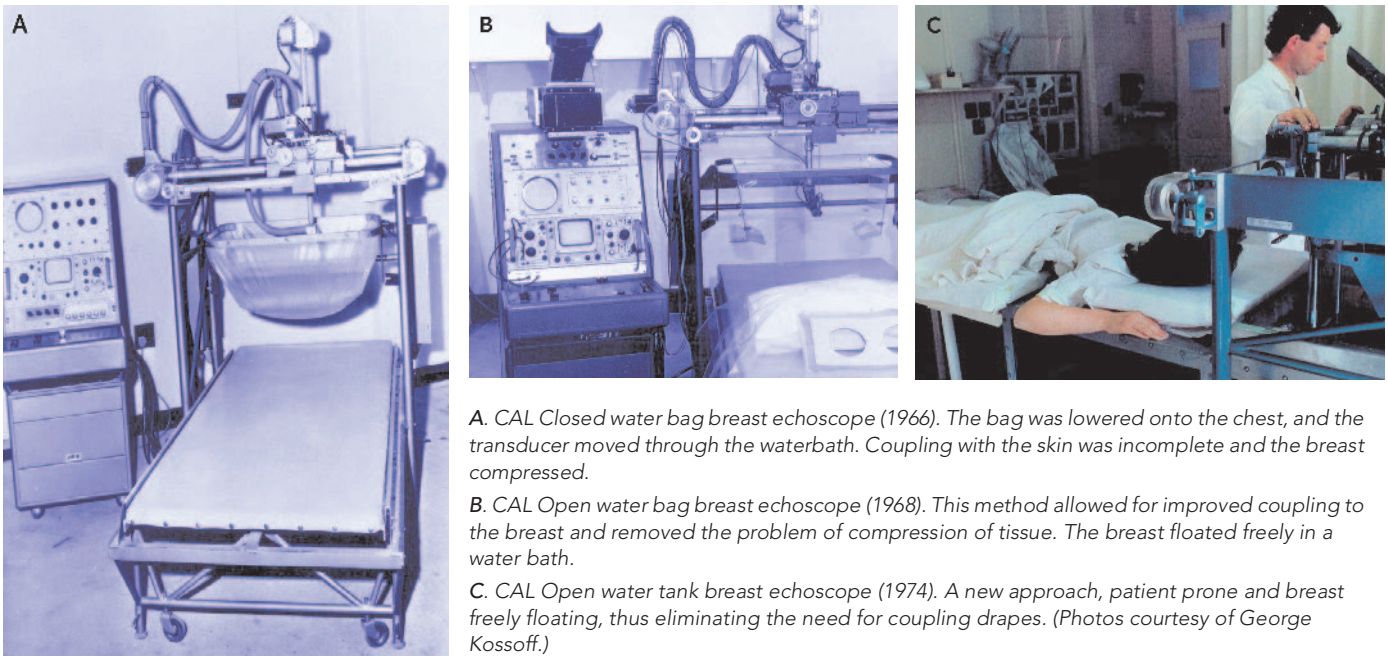
Rundle was a perfectionist, demanding that our every activity be of the highest safety and quality. The preoperative checklist was instituted (now indispensable in modern risk management) to ensure nothing was omitted in preparing patients. Every operative step was to be as haemostatic as possible,[4] and postoperative care empathic and supportive. These requirements became expected of all who worked or trained in what later became the University of Sydney Academic Surgical Unit at RNSH.

Cancer chemotherapy: A grant from the NSW State Cancer Council in 1958 enabled me to spend four months with cancer specialists Joe Burchenal and David Karnofsky (known for the Karnofsky Performance Scale for assessing terminally ill patients) at Memorial Sloan-Kettering Cancer Center in New York. I returned to initiate the provision of cytotoxic therapy at RNSH, which later established a formal medical oncology unit. Even then, the need to embrace randomisation and the careful accrual of evidence was seen as crucial.[5-7]

Thyroid database: On leaving the United States in 1955, I had been encouraged by my surgical mentors to embrace the computer age and "develop a prospective databank to record progress and results" — "outcome" as a word was still aborning. Our first cases at RNSH were accrued in 1957 and, over time, we honed the database into a useful clinical and research resource. All thyroid and parathyroid surgical procedures by the Endocrine Surgical

2 Development of breast ultrasound imaging — from weather maps to quality images

Initial attempts to develop breast ultrasound involved many women volunteers and a bistable waterpath machine, which provided linear, sector and compound scans. Sonograms were initially derived through a water bath in contact with but above the patient. Water sometimes spilled (Figure A), or leaked (Figure B), saturating staff and patients, but not their enthusiasm. Technology (Figures B and C) rapidly improved the quality of sonograms, and, in 1974, the patient's comfort (Figure C). With Kossoff and his associate, Jack Jellins, ultrasonographer Kaye Griffiths and her team, surgical registrar Bruce Barraclough, and sonograms from our volunteers, we were able to determine the "normal" sonographic appearance of the breast. It was hard going until Kossoff introduced "grey-scale" contrast into sonography,[14,15] which allowed tissue contrast and better identification of breast disease, a principle later applied to virtually all tissues[16] and "leading to the widespread adoption of ultrasound throughout the world."[17] Ultrasound now plays a significant role in breast cancer diagnosis — no more wet shoes and soaked patients!



A. CAL Closed water bag breast echoscope (1966). The bag was lowered onto the chest, and the transducer moved through the waterbath. Coupling with the skin was incomplete and the breast compressed.

B. CAL Open water bag breast echoscope (1968). This method allowed for improved coupling to the breast and removed the problem of compression of tissue. The breast floated freely in a water bath.

C. CAL Open water tank breast echoscope (1974). A new approach, patient prone and breast freely floating, thus eliminating the need for coupling drapes. (Photos courtesy of George Kossoff.)

Unit at RNSH are recorded, and at my retirement in 1988 numbered 10 000 entries.

Intrathoracic goitre: During the period of compulsory mass x-ray surveys for pulmonary tuberculosis in Australia between 1948 and 1975, many people were diagnosed with intrathoracic goitre. A prevalence study we conducted in metropolitan Sydney in 1953–1956 showed that intrathoracic goitre occurred in 1/5040 subjects examined (compared with 1/750 with active tuberculosis and 1/3500 with lung cancer) (Box 1). Unexpectedly, the prevalence of intrathoracic goitre was about three times greater among people born in England (then the main source of immigrants) than in those born in Australia.[8]

Diagnosis of intrathoracic goitre improved with the introduction of computed tomography scanning, as did the safety of operative procedures. We used a surgical approach based on embryology — a transverse incision in the lower neck (a collar incision) — delivering the goitre into the neck, which, with appropriate control of vascularity, resulted in minimal sternal splitting and avoided a transthoracic approach.[9]

This technique was refined over time with much input from surgical colleagues Alan Poole and Leigh Delbridge (and the surgical registrars) and particularly our anaesthetist Bruce White. Superb scrub and bedside nursing helped to ensure success. This led to a rethink in the treatment of recurrent goitre and provided leadership in optimising total thyroidectomy for nodular goitre, now a widely accepted procedure despite earlier controversy.[10-13]

Breast ultrasound: A visit to RNSH in 1962 by George Kossoff (who with David Robinson in 1961 built the first ultrasound scanner at the Commonwealth Acoustic Laboratories) led to another fortunate and fruitful long term collaboration — ultrasound of the breast (Box 2).

Surgery — academic and vascular

In 1961, Academic Clinical Units were established at RNSH, with the support of Sir John Loewenthal, then the Chair of Surgery at the University of Sydney. I was appointed Senior Lecturer in Surgery and subsequently became the inaugural Professor of Surgery in 1974. I believed, like Osler (quoting John Henry Newman), that: "An academical system without the personal influence of teachers upon pupils, is an Arctic winter."[18] Students were involved as far as possible in all unit activities, and teaching students and residents in the operating theatre became a major thrust of our program, although initially we were limited by a lack of full-time teachers.[19,20]

Graham Coupland was appointed senior lecturer in surgery in 1967 and was as great a friend and associate as I could have hoped for. With fellow surgeon Harry Cumberland, and encouraged by Douglas Piper, Professor of Medicine, he refined the investigation and surgical treatment of peptic ulcer, for which their preferred procedure was highly selective vagotomy.[21] Coupland's untimely death in 1982 came at a time of unit growth, as we taught

3 International Surgical Week — International Association of Endocrine Surgeons, Hong Kong 1993.

Back row: Joe Tjandra (Melbourne), Tom Reeve, Leigh Delbridge (Sydney). Front row: Raj Nambiar, Abu Rauf (Singapore), Martin Liepins (Riga, Latvia).

exceptional undergraduates, trained bright young people of integrity, and produced quality surgery and research.

Vascular surgery was developed by Douglas Tracy with my assistance.[22] However, with his departure to the University of New South Wales in 1961, this specialty grew very demanding of those remaining — Ray Hollings, myself, and later Graham Coupland. Ruptured aneurysms, which require immediate surgery, became the *bête noire* of our social and family life. At that time, pagers, which were the size and weight of a house brick, only emitted an alarm, and a telephone call determined the reason for the call.

In 1977, RNSH agreed to the appointment of a full-time academic vascular surgeon, Michael Appleberg, an excellent leader who took the department through to substantial strength in surgery,[23] research and training.

A stream of overseas and domestic visitors and interactive visits between the RNSH unit and overseas units promoted clinical and research strengths (Box 3).

Retirement

All these activities have provided a springboard for continued enjoyment of life after I retired from academia in 1988.

Elected President of the Royal Australasian College of Surgeons in 1989, I have travelled extensively in Australia and New Zealand. This experience has reinforced my perception that the exceptional compassion and service given in war are still given in peace. Australasian surgery and surgeons stand high with me.

I was asked to report on quality assurance in clinical management to the Australian Government Department of Health,[24] and now follow with interest the progress of the Australian Council for Safety and Quality in Health Care.

As Chair of the working party developing the *Clinical Practice guidelines on the management of early breast cancer*[25] and as a member of the board of the National Breast Cancer Centre (1995–2003), I have found it very satisfying to see women empowered to handle a life-threatening disease. Working with the Cancer Council Australia and the Clinical Oncological Society of Australia to develop the Australian Cancer Network has, since 1994, also kept me happily in contact with clinicians and consumers in promoting better cancer care. I have also maintained a clinical interest through surgical assisting.

I have more time to "smell the roses" and travel with Mary Jo to see friends and enjoy our grandchildren in the United States, with side trips to Europe. I read more, but am unable to keep up with all the good books that are published. I also have time to think over the contrasts between then and now and what is to come.

Surgery in 1947 was more uneven than today. There were top-level surgeons who performed to their level. A good deal of surgery, however, was done in small hospitals across the community, and too frequently exploratory laparotomy was performed for an obscure diagnosis. The limitations were primarily in training and diagnostic technology. The idea that doctors "owned" the patients was diminishing, but still prevalent. This limited patients in obtaining a second opinion, when perhaps it should have been embraced.

I have observed changes and been pleased to have the opportunity to be involved, and sometimes been supportive in promoting change. Strong academic units centred in training hospitals across Australia have, together with the Royal Australasian College of Surgeons and specialist surgical societies, embraced strong mentoring and graduated and proficient training. The quality of surgery and hospitals has been improved by these educational and vocational developments. Australian patients have access to surgery of the highest quality.

The future for surgery should know no limits, with increasing precision of diagnosis, limited wounding associated with surgical access, and developments in pharmacological and genetic interventions. Surgeons will be expected to understand and fully explain the complexities of many new approaches to treatment, some of which will not be operative surgery. The psychosocial aspects of surgery will reinforce the benefits patients should enjoy from the science and art of surgery, in which the level of trust between surgeon and patient must remain inviolable. I am delighted that opportunity for betterment for patients expands apace.

Fortune has indeed smiled on me. As I look to the future, remembering colleagues, nurses, students and patients, I remain aware that

> I have gathered a posy of other men's flowers and only the ribbon which binds them is mine (Sanskrit).

References

1 Welch CS, Kiley JE, Reeve TS, et al. Treatment of bleeding from portal hypertension in patients with cirrhosis of the liver. *N Engl J Med* 1956; 254: 496-502.
2 Blalock A. The effects of an artificial ductus arteriosus or experimental cyanosis and anoxemia. *Arch Surg* 1946; 52: 247-252.
3 Monk I, Reeve TS, Kalokerinos J, Wingfield J. A preliminary report on a study of experimentally produced tricuspid and mitral valve regurgitation. *Br J Surg* 1958; 66: 75-82.
4 Hercus V, Reeve TS, Tracy GD, Rundle FF. Blood loss during surgery. *BMJ* 1961; 2: 1467-1469.
5 Jones KOA, Reeve TS, Piper DW, Cumberland VH. Disseminated abdominal melanoma treated by massive dose of nitrogen mustard and autogenous bone marrow replacement. *Med J Aust* 1960; 2: 61-63.
6 Reeve TS, Myhill J. The role of radioactive isotopes and alkylating agents in the treatment of malignant effusions. *Med J Aust* 1962; 2: 245-248.
7 Reeve TS. Chemotherapy of malignant disease: 1. Solid tumours. *Med J Aust* 1962; 2: 867-870.
8 Reeve TS, Rubenstein C, Rundle FF. Intrathoracic goitre: its prevalence in Sydney metropolitan mass radiography surveys. *Med J Aust* 1957; 2: 149-152.
9 Reeve TS, Rundle FF, Hales IB, et al. The investigation and management of intrathoracic goiter. *Surg Gynecol Obstet* 1962; 115: 223-229.

10 Reeve TS, Delbridge L, Cohen A, Crummer P. Total thyroidectomy. The preferred option for multinodular goiter. *Ann Surg* 1987; 206: 782-786.
11 Delbridge L, Guinea AI, Reeve TS. Total thyroidectomy for bilateral benign multinodular goiter: effect of changing practice. *Arch Surg* 1999; 134: 1389-1393.
12 Delbridge L. Total thyroidectomy: the evolution of surgical technique. *ANZ J Surg* 2003; 73: 761-768.
13 Wheeler MH. Total thyroidectomy for benign thyroid disease. *Lancet* 1998; 351: 1526-1527.
14 Dempsey PJ. The history of breast ultrasound. *J Ultrasound Med* 2004; 23: 887-894.
15 Jellins J, Kossoff G, Reeve TS, Barraclough BH. Ultrasound grey scale visualisation of breast disease. *Ultrasound Med Biol* 1975; 1: 393-404.
16 Barraclough BH, Reeve TS, Duffy PJ, Picker RH. The localisation of parathyroid tissue by ultrasound scanning before surgery in patients with hyperparathyroidism. *World J Surg* 1981; 51: 91-95.
17 Griffiths KA. An historical look at ultrasound as an Australian innovation on the occasion of the ultrasound stamp issued by Australia Post — 18 May 2004. *ASUM Ultrasound Bulletin* 2004 August 7: 3: 22–26. Available at: www.medeserv.com.au/asum/bulletin/v7n3/v7n3_historyrvw.pdf (accessed Nov 2004).
18 Ludmerer KM. Learner centred medical education. *N Engl J Med* 2004; 351: 1163-1164.
19 Martin L, Delbridge L, Martin J, et al. Trainee surgery: is there a cost? *ANZ J Surg* 1989; 257-260.
20 Reeve TS, Curtin A, Fingleton L, et al. Can total thyroidectomy be performed as safely by general surgeons in provincial centres as by surgeons in specialised endocrine surgical units. *Arch Surg* 1994; 129: 834-836.
21 Coupland GA, Cumberland VH, Lorang ME. Selective vagotomy for duodenal ulcer: a five year follow-up. *Med J Aust* 1977; 2: 386-389.
22 Tracy GD, Reeve TS. Mortality factors in ruptured aortic aneurysm. *ANZ J Surg* 1965; 35: 85-93.
23 Appleberg M, Coupland GAE, Reeve TS. Ruptured abdominal aortic aneurism: long term survival after operation. *ANZ J Surg* 1980; 50: 28-32.
24 Reeve TS. Report prepared for the Department of Health, Housing, Local Government and Community Services. Coherent and Consistent Quality Assurance and Utilisation Review Activities in Public and Private Hospitals in Australia, June 1993; and Supplementary Report July 1994 for Commonwealth Department of Human Services and Health, 1993. Canberra: The Department, 1993, 1994.
25 National Breast Cancer Centre. Clinical practice guidelines for the management of early breast cancer. Canberra: National Health and Medical Research Council, 2001. ❑

SNAPSHOT

Going with the flow: *Ascaris lumbricoides* in a T-tube

A 68-year-old woman presented with cholelithiasis and common bile duct obstruction. Laboratory tests showed leukocytosis and raised serum alkaline phosphatase levels, but the eosinophil count was normal. Faecal microscopy was not performed.

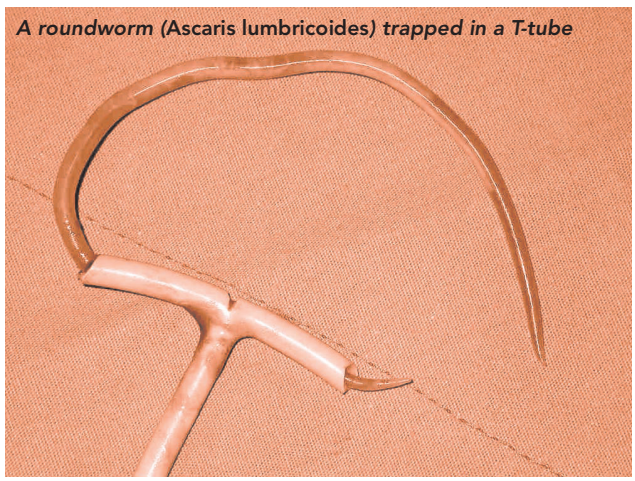
Removal of the stones by means of endoscopic retrograde cholangiopancreatography and endoscopic sphincterotomy was unsuccessful because of difficulty catheterising and visualising the ampulla of Vater. After open cholecystectomy and exploration of the common bile duct, the sphincter of Oddi was dilated with bile duct dilators, and a T-tube was inserted before closure. After an uneventful postoperative period, the T-tube was removed 14 days after operation. A dead *Ascaris lumbricoides* roundworm was trapped in the T-tube.

The patient was discharged 2 days later after receiving anthelmintic treatment. Abdominal ultrasound and stool examinations showed no abnormalities at follow-up after 1 month and 6 months.

A. lumbricoides, the most common roundworm infecting humans, is endemic in areas where sanitation standards are poor. Adult worms normally reside in the upper gastrointestinal tract, but can migrate into any organ in the body, including the biliary tree (biliary ascariasis).[1]

Ilyas Baskonus,* Gokturk Maralcan† Abdullah Serin,‡ Necdet Aybasti§
*† Assistant Professor, ‡ Research Student, § Professor
Faculty of Medicine, Department of General Surgery
Gaziantep University, Gaziantep, 27310, Turkey.
ilbaskonus@hotmail.com

1 Kolt SD, Wirth PD, Speer AG. Biliary ascariasis — a worm in the duct. *Med J Aust* 1991; 154: 629-630. ❑



A roundworm (Ascaris lumbricoides) trapped in a T-tube