

LETTERS

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Finger fracture mitral valvuloplasty: a tribute to the pioneers of cardiac surgery

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TO THE EDITOR: We report an exceptional case of a woman who underwent emergency “finger fracture valvuloplasty” (FFV) in 1954 to treat rheumatic mitral stenosis and required no further surgical intervention for 51 years.

The woman presented in 1954 with pulmonary oedema due to mitral stenosis during the first trimester of her second pregnancy. She underwent FFV at Lewisham Hospital in Sydney. She had a prolonged convalescent period, was discharged after 5 months, and delivered a healthy child. She was one of two pregnant patients reported in the *Medical Journal of Australia* by Hall and Windsor.¹

She remained well and active until 2005, when she presented with New York Heart Association Class III symptoms of dyspnoea on exertion, and ultimately underwent mitral valve replacement that year. She made a good recovery postoperatively and remains well.

In the 1920s, 10 patients with mitral valve stenosis were treated surgically.² In 1923, Cutler and associates from Boston operated on seven patients using a cardio-valvulotome (through the left ventricle) and, in the same year, Duff and Evarts from Washington used a cardioscope (through the left atrium) on one patient. In 1925, Soutter from London and Pribram from Germany used a “finger fracture method” and a valvulotome, respectively, on one patient each. However, of the 10 patients, only two survived, one of Soutter’s and one of Cutler’s. The procedure was subsequently successfully revived in 1948 by Harken in Boston, Bailey in Philadelphia, Blalock in Baltimore, Brock in London, and others,

who performed various procedures including valvuloplasty and commissurotomy. However, the so-called FFV (Harken) became the favoured procedure. It evolved from using the forefinger, to using the little finger, to eventually using a knife. Most surgeons had difficulty in using the mitral knife to divide the medial commissure and thus developed their own instrument.²

There are few successful case reports of FFV in pregnancy. In the United Kingdom, Brock reported three, Logan and Turner, six, and Marshall and Pantridge, 18.³ Hall and Windsor in Sydney performed FFV in two of seven pregnant women who were being considered for FFV, including our patient. One of the other five, who were managed conservatively, died.¹

In 1963, Windsor said, “Eleven years’ experience in the surgery of the mitral valve has brought with it a great respect for the ability of the mitral commissures to resist finger, knife and dilator”. He reported follow-up of 90 patients who underwent FFV. No more than 40 patients (45%) obtained good results. Sixteen patients in this group have since been reoperated upon by the more effective transventricular route using a mechanical expanding dilator.⁴

It should be noted that mitral stenosis in young women is rarely accompanied by calcification, and this may allow a more complete and successful valvuloplasty. All the procedures mentioned above occurred before the development of cardiopulmonary bypass and open heart surgery in 1954.

Early pioneers in surgery faced many challenges and disappointments, as well as condemnation, criticism and ridicule from colleagues. Some, like Soutter and Bailey (the latter nicknamed the “butcher of Hahnemann Hospital [Philadelphia]” after his first four FFV patients died) lost their practices.⁵

We would like to pay homage to all surgical pioneers and conclude with a comment from Harken: “He who would not learn from the past is condemned to relive it”.

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¹ Hall GV, Windsor HM. Mitral valvotomy for mitral stenosis: an analysis of 104 cases from this viewpoint. *Med J Aust* 1956; 43: 558-567.

² Bland EF. Surgery for mitral stenosis. *Circulation* 1952; 5: 290-299.

³ Marshall RJ, Pantridge JF. Mitral valvotomy during pregnancy. *Br Med J* 1957; 1: 1097-1099.

⁴ Windsor HM. Mitral valvotomy — its evolution to the open operation. *Med J Aust* 1963; 1: 232-236.

⁵ Khan MN. The relief of mitral stenosis. An historic step in cardiac surgery. *Tex Heart Inst J* 1996; 23: 258-266. □

Ototoxic ear drops with grommet and tympanic membrane perforations: a position statement

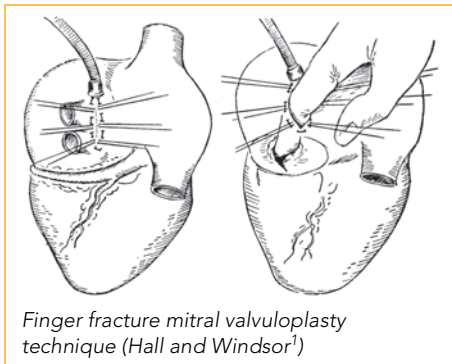
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TO THE EDITOR: Systemic ototoxicity secondary to the use of aminoglycosides is well known in clinical medicine, and appropriate monitoring measures to prevent vestibulo-cochlear ototoxicity are routinely performed. Less well known is the potential for topical ear drops, particularly the aminoglycoside group, to cause both vestibular and cochlear damage when introduced through a patent grommet or tympanic membrane perforation for the treatment of infection.¹ Although the incidence of aminoglycoside ototoxicity with ear drops is uncommon (for cochlear toxicity, in the order of one in 10 000 patients treated²), individual susceptibility and patient compliance problems may lead to inner ear damage.

Concerns with the potential ototoxicity of aminoglycoside ear drops has led to American,³ British⁴ and Canadian⁵ expert committees providing guidelines on the use of potentially ototoxic ear drops in patients with tympanic membrane perforations or patent grommets. The Consensus Panel of the Australian Society of Otolaryngology Head and Neck Surgery (ASOHNs) unanimously agreed on the recommendations shown in the Box, which are based on the American guidelines.

Broadly speaking, the Consensus Panel recommends avoiding the use of ototoxic ear drops in patients with perforated tympanic membranes where possible.

The Australian National Aboriginal Community Controlled Health Organisation study showed that the non-ototoxic fluoroquinolone drops were more effective than commonly used ototoxic ear drops.¹ An application to the Therapeutic Goods Administration for introduction of cipro-



Finger fracture mitral valvuloplasty technique (Hall and Windsor¹)

Recommendations of the Consensus Panel of the Australian Society of Otolaryngology Head and Neck Surgery on ototoxic ear drops and tympanic membrane perforation

- Non-ototoxic eardrops are preferable in the presence of tympanic membrane perforations or grommets.
- If potentially ototoxic antibiotic ear drops are used, they should only be used in infected ears and discontinued immediately the infection has resolved.
- If potentially ototoxic antibiotic ear drops are prescribed for use in the open middle ear or mastoid, the reason for their use and a warning to the patient/parent of the risk of ototoxicity should be given and documented.
- If potentially ototoxic antibiotics are prescribed, the patient should be specifically instructed to return to the doctor if he or she develops vertigo, hearing loss or tinnitus.
- If the tympanic membrane is known to be intact and the middle ear and mastoid are closed, then the use of potentially ototoxic preparations presents no risk of ototoxic injury. ◆

floxacin drops to the ear has recently been approved, and has been placed on the Pharmaceutical Benefits Scheme as an authority prescription for Aboriginal and Torres Strait Islander children with chronic suppurative otitis media as of February 2007.

However, clinical circumstance may dictate that potentially ototoxic agents need to be used if culture/sensitivity testing suggests that fluoroquinolone drops would not be appropriate, are unavailable, or if previous treatment with fluoroquinolone ear drops failed.

The Consensus Panel did not believe routine auditory/vestibular monitoring was warranted by the risks of ototoxicity, provided the treatment was short (5–10 days).

The full document outlining the Consensus Panel's recommendations is available from ASOHNS.

Competing interests: Zoran Becvarovski, Harvey Coates and Christopher Perry received honoraria for attendance at scientific meetings sponsored by Alcon Laboratories, which manufactures ciprofloxacin ear drops.

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