EDITORIAL COMMENTARY

Rethinking cardiac surgical care in South Africa: A call for a dialogue

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The editorial titled "Cardiac surgery in South Africa: Have we failed our legacy?" By Reddy et al. discusses the temporal transition of cardiothoracic surgery in South Africa.[1] Cardiothoracic surgery in South Africa has a strong international legacy, highlighted by the world's first heart transplant in 1967. However, at present services are unevenly distributed, with most specialists and resources concentrated in urban private hospitals, while the public sector faces long waiting lists and limited capacity. Chris Hani Baragwanath Academic Hospital (CHBAH), the third largest hospital in the world, currently lacks onsite cardiothoracic surgical services and has not performed cardiac surgery for nearly 30 years.[2] All surgical cases are referred to the overburdened and under-resourced Charlotte Maxeke Johannesburg Academic Hospital.[2]

The observations by Reddy et al. regarding late patient presentations, long surgical waiting lists and sub-optimal surgical outcomes are supported by recent research works of Banderker et al. and Sumaraj et al.[3,4] The study by Banderker et al. demonstrate that patients with predominantly rheumatic mitral valve disease in the South African public sector experience prolonged delays to surgery, presenting late with advanced heart failure, pulmonary hypertension and atrial fibrillation.[3] Sumaraj et al. show the downstream consequences of these delays: even after mitral valve replacement, patients remain burdened by residual ventricular dysfunction, pulmonary hypertension, high rates of atrial fibrillation and stroke, and poor anticoagulation control.[4] A notable finding was the low rate of concomitant tricuspid annuloplasty, despite the frequent presence of pulmonary hypertension and functional tricuspid regurgitation—conditions for which guidelinedirected surgery would support tricuspid intervention at the time of mitral valve replacement. The absence of tricuspid repair likely reflects late referral, surgical prioritisation under resource constraints, and limited operative time, and may contribute to persistent rightsided dysfunction after surgery. Together, the studies highlight a continuum of care failure in which delayed access to surgery, shortage of experienced surgeons, and inadequate longterm followup jointly drive morbidity. Improving outcomes will require not only surgical capacity expansion but also earlier referral and stronger postoperative care systems. Another study from central South Africa reported generally good outcomes of patients undergoing mitral valve surgery, with in-hospital mortality rates around 3.8 to 4.8%.[5] The author documented overall inhospital complication rate of 14% across the cohort. Data on long-term morbidity was not reported.

Prosthetic valve replacement in young patients as shown by Sumaraj et al. and previously reported by Antunes is associated with comparatively higher morbidity, even with modern valve designs.[4,6] For degenerative mitral valve prolapse a South African study has shown mortality rate for mitral

valve repair of 4.8% at 6 months.[7] However, current data on rheumatic mitral valve repair in adults is scarce in South Africa. Improved understanding of rheumatic valve pathology and advances in repair techniques have led to progressively better results in mitral regurgitation, making mitral valve repair a worthwhile and preferred strategy whenever feasible.[6] The likelihood of successful rheumatic mitral valve repair increases with the surgeon's experience and commitment to valve preservation, highlighting the importance of adequate surgical exposure and training.

The status pertaining to aortic valve disease management also presents a dismal picture. Dlamini et al. conducted a prospective study entitled "A cross-sectional study of clinical and echocardiographic characteristics of adult aortic valve disease at Chris Hani Baragwanath Academic Hospital".[8] Over half of patients with aortic valve disease presented with heart failure and experienced high rates of pulmonary hypertension and atrial fibrillation. A significant proportion awaited surgery. In a retrospective study (2010-2020) by Chingwaru et al "In-hospital mortality post-surgical aortic valve replacement for severe aortic valve stenosis at a quaternary hospital in South Africa" outcomes after isolated aortic valve replacement were poor, with high inhospital mortality largely driven by bleeding and sepsis, reflecting advanced disease and sub-optimal peri-operative care.[9] On the other hand a retrospective study by Scherman et al. reported in-hospital/30-day mortality for the rheumatic mechanical AVR of 1.9% but late mortality was high and primarily related to bleeding and thromboembolic events.[10]

Referral and surgery for complex cardiac pathologies such as aortic aneurysms and congenital heart disease (CHD) remains an ongoing challenge. Meel et al. study on ascending aortic aneurysms showed that only about a third of patients underwent surgical intervention, and overall mortality remained significant, particularly among those presenting with acute aortic dissection. We concluded that ascending aortic aneurysms at CHBAH setting are common, present late, and are associated with considerable morbidity and mortality, especially in association with hypertension and HIV. Rossouw highlighted that CHD is the most common congenital abnormality globally and is associated with higher mortality than any other birth defect.[12] Yet, in Africa most children present late, often only after severe complications and multiorgan dysfunction have developed. Limited access to early diagnosis, including the underuse of simple and inexpensive screening tools such as pulse oximetry, contributes to delayed referral and poor outcomes.

Advances in the field of interventional cardiology offers an alternative to surgery but only to a select group of patients and regions in South Africa. The introduction of transcutaneous aortic valve implantation at major hospitals in the country now offers an alternative for degenerative aortic valve stenosis cases.[13] Similarly, the introduction of mitral clip in South Africa also allows for transcutaneous mitral valve repair in degenerative mitral valve regurgitation.[14] In an 11-year follow-up study Pillay et al. showed that percutaneous pulmonary valve implantation in central South Africa is a feasible, safe, and durable alternative to repeat surgery for right ventricular outflow tract dysfunction.[15] Procedural mortality was low, and long-term valve performance was good, with most patients experiencing sustained haemodynamic and clinical benefit.

The editorial also raises concerns regarding few training posts and the quality of training due to a shortage of experienced cardiothoracic surgery consultants in the state sector.[1] Existing literature makes clear that cardiothoracic surgery training crisis in South Africa is not primarily educational, but structural and political, reflecting underinvestment in specialist posts, weak succession planning, and declining publicsector surgical capacity.[16,17] Without urgent intervention to expand funded registrar and consultant posts in cardiothoracic surgery, cardiology and support staff involved in management of cardiac patients, the existing shortage is expected to worsen, with direct implications for patient mortality and the collapse of tertiary and quaternary cardiac surgical services.

As emphasised in the editorial, future progress will rely on strengthening publicsector capacity, advancing meritbased and competent leadership, expanding highquality training through structured registrar rotations in the private sector via strengthened public–private partnerships, and aligning health policy with the demands of highcost surgical care, supported by locally relevant research on surgical outcomes.[1] Only through effective dialogue between multidisciplinary teams involved in the management of cardiac patients and the Department of Health can the aforementioned challenges be addressed and solutions implemented before irreversible damage occurs and services collapse completely.

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