

# Early cardiac surgery in Malta

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## Abstract

Cardiac surgery in Malta started in 1918 with the removal of a bullet from the left ventricle. The second operation took place almost thirty years later with the ligation of a persistent ductus arteriosus. During the next thirty five years close ties with the UK were fostered and Maltese patients were sent there for specialist treatment and surgery. By the early 1980's patients were being investigated in Malta and visiting teams from the UK performed surgery both here and abroad. This expanding service was a prelude to the setting up of a permanent local service, which began operations in 1995.

## Introduction

The early days of cardiac surgery saw the occasional procedure making the headlines. The first such operation in Malta resulted in the death of the patient four weeks post-operatively. This paper describes those heady days and the subsequent evolution into a regular practice, which yielded gratifying results.

## Keywords

Early cardiac surgery Malta

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## The pre-1962 era

### *The first operation*

Cardiac surgery was inaugurated in Malta in 1918 when Sir Charles Ballance, a renowned neurosurgeon and a colonel in the British Expeditionary Forces in Malta, removed a bullet from the heart.<sup>1</sup> A 21-year old soldier, wounded in Salonica in November 1917, was evacuated to Malta under the care of Ballance at St Elmo Hospital. X-rays revealed a bullet lodged in the free wall of the left ventricle. On 16<sup>th</sup> February 1918 Ballance cut into the ventricle and retrieved the bullet, causing considerable haemorrhage in the process. He was prepared for this occurrence and arranged for a direct transfusion of a donor's blood. This blood donation was terminated after 5 minutes when the donor's blood pressure fell to 90mmHg. Ballance recognised his limitations when it came to speed and had the foresight to deal with this challenge. He was described as a "painstakingly slow but delicate and meticulous operator."<sup>1,2</sup> The surgery was successful but the patient died of infection four weeks later. Ballance observed that "it is a common experience that bullets frequently lodge in the tissue and induce neither local nor general infection until attempts at removal are made."<sup>3</sup> Ballance was also responsible for training the first Maltese full-time anaesthetist, a certain Emmanuel Vella.<sup>4</sup> For his services he was awarded an honorary MD by the University of Malta, became a Knight of Grace of the Order of St John of Jerusalem, was decorated The Most Honorable Order of the Bath (military) in 1916, and was made Knight Commander of St Michael and St George in 1918. The following year, as Bradshaw lecturer, he delivered a lecture entitled "On the surgery of the heart."<sup>5</sup>

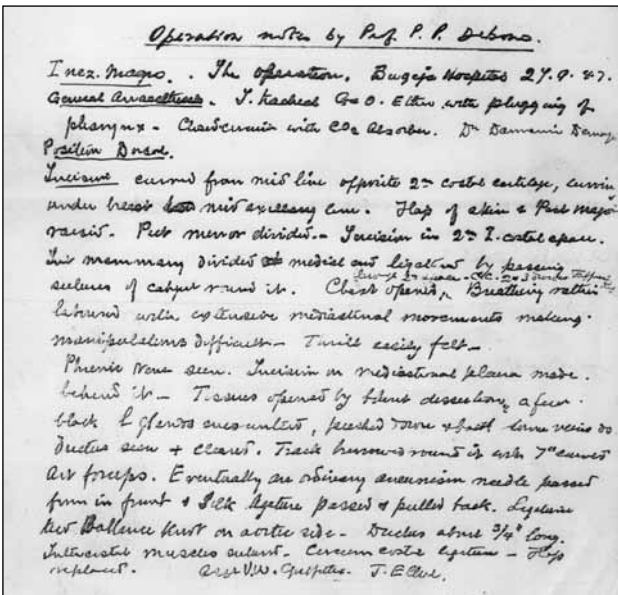
John Poynton recalls Ballance as being "pompous but intelligent, Sir Charles had the biggest head I think I have ever seen. Very sure of his own value in the Great War he became covered with medals and orders and such like. He was a man of great parts, and earnest in the advance of surgery. I was his House Surgeon." (Figure 1).<sup>6</sup>

### *The first successful operation*

The next milestone came in 1947 when Prof. Peter Paul Debono operated on eight year old Iris Magro of Naxxar and successfully ligated her patent ductus arteriosus. The operation was performed on the 27<sup>th</sup> September at the Bugeja Hospital, Hamrun. The first assistant was Dr. Victor Griffiths while the anaesthetist was Dr. Joseph Darmanin Demajo. The patient was referred by Peter Paul's brother, Prof. Josie Debono and by Dr. Victor Captur. She complained of weakness and lethargy and



**Figure 1:** photograph of Sir Charles Ballance from his obituary in the BMJ



**Figure 2:** The operation note describing the ductus ligation



**Figure 3:** Prof Peter Paul Debono with his patient Iris Magro

had a fever of up to 102°F. Examination revealed a machinery murmur in the pulmonary area and blood cultures were repeatedly positive for *Streptococcus viridans*. There were no peripheral emboli but pulmonary emboli were suggested by a changing pattern on serial lung X-Rays. A 3-lead ECG was normal. A presumptive diagnosis of infective endarteritis of the patent ductus warranted urgent surgery. At operation, the left chest was entered via the second interspace, with division of two adjacent ribs. The 3/4 inch ductus was identified and a silk ligature was passed over an aneurysm needle. The ductus was tied on its aortic side using a Ballance knot (Figure 2).

This first “heart operation” made Maltese surgical history and was recorded in the Times of Malta (Figure 3).<sup>7</sup> Over the next three years Prof. Peter Paul Debono served as Minister for Health and his assistant was later promoted to professor of surgery.<sup>8</sup>

### The 1962-1983 era

#### Maltese cardiac patients and the UK

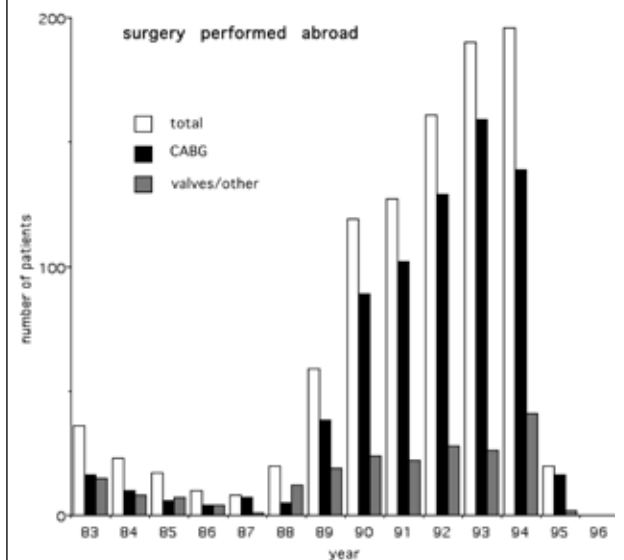
The early sixties saw a consolidation of the links with the United Kingdom in the field of cardiology and cardiothoracic surgery. Visiting consultants from London came to Malta on a regular basis to see patients and advise on treatment. Some of these patients were sent to centres of excellence in London for further investigation and, in some cases, surgical treatment. Foremost amongst these visitors were cardiac surgeon Mr. Lance Bromley and cardiologist Dr. Edwin Besterman from St Mary’s Hospital, London. Besterman was appointed visiting cardiologist in Malta from 1962 until his retirement in 1984.<sup>9</sup> Bromley performed over 200 closed mitral valvotomies on Maltese patients in London and referred to this series in making a case for the continued use of this procedure in preference to open valvotomies.<sup>10</sup> A handful of minor procedures were performed in Malta in the late 70’s by Mr. Lance Bromley, Mr. Frantisek Grossman (assisted by Dr. Charles Savona-Ventura) and Prof. Anthony Debono involving epicardial lead implantation via thoracotomy in patients with limited trans-venous access (Mr. Charles Messina - personal communication). Later on, invasive investigations via cardiac catheterisation began to be carried out in Malta.

Overseas consultant cardiothoracic surgeons and cardiologists were also asked to review patients in Malta with congenital heart disease, and this led to such individuals being referred to London for investigation and surgery. Patients were initially referred to The Hospital for Sick Children (GOSH), Guy’s Hospital and St Mary’s Hospital from 1966 up to the early 1980’s.

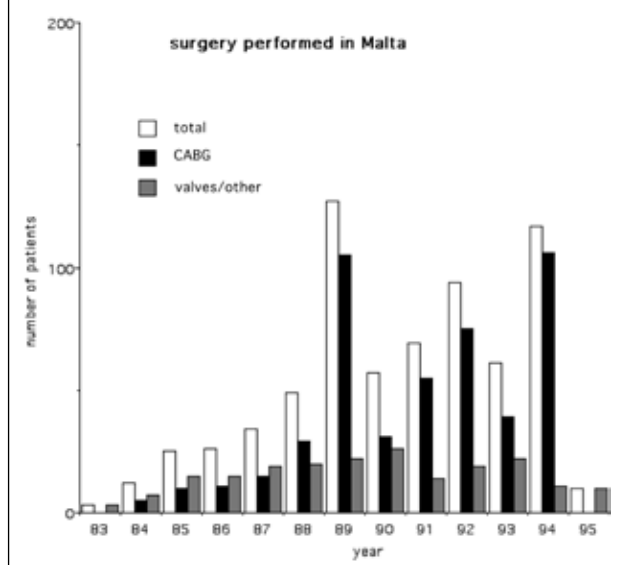
### The 1983-1995 era

In 1983 Mr. Alan Yates performed the first heart operation in Malta and inaugurated an intermittent service here. Over the years, Maltese patients benefited from the services of UK teams who performed surgery both in the UK (Figure 4) and in Malta (Figure 5). Mr. Alan Yates, from Guy’s Hospital, was joined by Mr. David Anderson from his unit. Other teams participating in this program were headed by Mr. Rex Stanbridge from St

**Figure 4:** Maltese patients undergoing cardiac surgery in the UK 1983-1995. CABG: Coronary artery bypass graft



**Figure 5:** Maltese patients undergoing cardiac surgery in Malta 1983-1995. CABG: Coronary artery bypass graft



Mary's Hospital, Mr. Fik Shabbo and Mr. John O'Riordan from the Brook Hospital, Mr. Alan Wood from the Royal London Hospital, as well as Mr. Brian Fabri from Liverpool. The early 1990's ushered in an expansion in terms of numbers and this provided a catalyst for setting up a permanent local cardiothoracic unit.

After 1983 paediatric referrals were sent to the Hammersmith Hospital, London and in 1988 this practice reverted primarily back to GOSH. A visiting team led by Prof. Martin Elliott began to visit Malta for one week periods in 1989 in order to deal with simple congenital heart lesions, such as atrial septal defects, and by 1990-94, 30 of 176 operations were carried out in Malta.<sup>11</sup>

### Preparations for the local cardiothoracic unit

The first author visited Malta in January 1995 on a fact-finding mission and performed a trial series of 10 cardiac operations. Following his appointment as consultant cardiothoracic surgeon, and anticipating the arrival of cardiologist Prof. Albert Fenech from the UK, the permanent local program was planned to commence in April 1995. In preparation for a smooth start in Malta, local theatre, intensive care and ward nurses were flown to the Northern General Hospital, Sheffield for clinical training. Major equipment that was purchased around this time included a heart-lung machine with a heater/cooler unit, a blood gas analyser, theatre and transfer monitors, a servo ventilator, an intra-aortic balloon pump, syringe drivers, surgical instruments, as well as pump sets, oxygenators and heart valves.

Based on the intervention rates in 1993 and 1994, both with regard to angioplasty and surgical operations, and taking into account the size of the Maltese population and the waiting list as it stood in January 1995, it was projected that approximately 350 operations would have to be performed annually in order to provide an effective service. In the event 300 operations were performed during the first year.

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