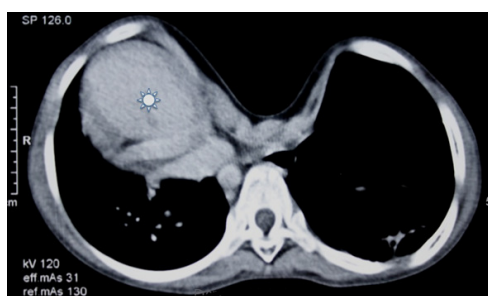


Minimally invasive repair of Pectus Excavatum Workshop: 21-22 November 2011

Chee Fui CHONG

Thoracic Unit, Department of Surgery, RIPAS Hospital, Brunei Darussalam



Pectus excavatum (PE) is a developmental abnormality of the anterior rib cage, involving the lower ribs, costal cartilages and the sternum, resulting in a sunken depression of the sternum (breastbone). PE is also known as 'sunken chest' or 'funnel chest' is often present at birth, which may be a mild depression but progresses deeper as the child grows, reaching maximum depression by teenage years as bone growth ceases.

The incidence of PE has been reported to be one in 300-400 live births and affects male more often than female. It is and accounts for almost 90% of all congenital chestwall deformities. There are also other congenital abnormalities affecting the cardiovascular systems as well as the musculoskeletal system. The aetiology is unknown but is believed to be abnormality of the costal cartilages either hyperplasia or more recent evidence pointing towards a failure of maturity of the cartilage matrix as the child grows.

Correspondence author: CF CHONG
Thoracic Unit, Department of Surgery,
RIPAS Hospital, Bandar Seri Begawan BA 1710,
Brunei Darussalam
Tel: +673 2242424
E mail: wcfchong@gmail.com

This condition however is correctable by surgery and up to November 2011, patients with PE in Brunei Darussalam were treated conservatively with regular clinic follow-up and psychosocial counselling. The need to establish a surgical service for the correction of PE is quite obvious after having followed up three unique young individuals with the condition and the look of longing in their eyes to have the condition corrected so that they can lead a normal life of outdoors activity with their peers.

Surgical correction can be achieved using a minimally invasive thoracoscopic technique called 'NUSS procedure', named after Professor Donald Nuss, a paediatric surgeon at the Children's Hospital of The King's Daughters (Norfolk, Virginia, USA), who was the pioneer of the procedure for correction of PE. It is more commonly known now as MIRPE or 'Minimally invasive repair of PE'. This procedure which is easily accessible in the west but in our region of Southeast Asia, only a few centres in Singapore, Kuala Lumpur, Malaysia and Bangkok are beginning to perform the MIRPE procedure.

An alternative and much older procedure is

the open Ravitch repair. However this was more invasive and destructive to tissue. MIRPE however, is a minimally invasive procedure involving two small incisions on the lateral chestwall. An introducer trocar, specially designed for pectus repair, is introduced into the pleural space at the maximum point of depression of the anterior ribs and tunnelled across the anterior mediastinum, just behind the sternum and above the pericardium and the beating heart to enter the contralateral pleural space and out through the other stab incision. Through this tunnelled route a pre-bended steel bar, bend according to the contour of the abnormal chestwall but an opposite image of the pectus deformity. This steel bar is introduced with the convex side pointing inwards but then rotated to face anteriorly behind the sternum, pushing and correcting the depression in one swift move. This procedure has been performed in more than 3000-4000 cases worldwide.

The current policy of the Ministry of Health, Brunei Darussalam requires that a workshop be organised with foreign expert (s) brought in to conduct the new procedures as well as teaching and transferring skills and knowledge to the local surgeons, before the new service can be offered to the majority of the general public. The purpose of such a policy is not to hinder the introduction of new services but to ensure that such new services are introduced in the proper manner, ensuring the highest of quality of the services introduced.

There are only two well-renowned experts, Professor (Prof) Donald Nuss from the United States of States of America and more closer to our region, Prof. Hyung Jung Park from South Korea.

Opportunity arised in the joint meeting of the ASCVS (Asian Society for Cardiovascular Surgery) and ATCSA (Association of Thoracic and Cardiovascular Surgeons of Asia) meeting in Phuket, Thailand in May 2011. After a discussion, Prof. Park courteously accepted the invitation to conduct a PE workshop in Brunei Darussalam. After several email correspondences, a workshop titled 'MIRPE 2011 Workshop' was held on the 21-22 November 2011.

The workshop programme consisted of a series of lectures given by both Profs and a local delegate on their experiences with PE repairs lectures on pathophysiology and open surgical correction of PE, on the morning of the first day. This was followed by a live telecast case from the operating theatre showing the MIRPE being carried out on one of the three patients. On the second day, two more cases were operated on. The first case went smoothly whereas the second case, a young lady with a deep lower 2/3 PE and a previous history of a lower lobectomy for cystic malformation was more complex. However, Prof. Park was able to repair the deformity with excellent result.

The MIRPE workshop 2011 was a resounding success but it was not all work. The Profs. took a memorable but tiring day trip to the Ulu Belalong National Park in Temburong. Meeting with the Minister of Health led to the formulation of a Memorandum of Understanding. The patients and families when interviewed expressed their satisfactions with the results and we are certain that this endeavour has made a huge impact to the self esteem and confidence. It is hoped that through this workshop, further collaborations can be done and repair of PE can be carried out more routinely in Brunei Darussalam.



Visiting Professors and participants at the dinner held on the first day of the workshop.