Summary

Dissection of the aorta is a catastrophic event which is charactrized by the separation of the layers of the media by a column of circulating blood with variable proximal as well as distal extension through out the entire length of the aorta. The incidence of acute aortic dissection is approximately 5.2 per million population per year and is almost twice as frequent as reptured abdominal aortic aneurysm. It is seen in all age groups. Although it is rare in the extremes of life. It is found in 1% - 2.5% of coroner's autopsies.

Clinically dissection seen within the first 2 weeks. Following onset of symptoms are considered acute, and after this period, chronic. In the natural history of the disease the major proportion of the mortality due to dissection occurs in these critical first 2 weeks; the acute mortality is 74% - 89%. The original DeBakey clinical classification of dissection was subsequently simplified into three basic types. Stanford classification that divides acute aortic dissection into two basic types A and B.

Therapy for aortic dissection is directed at halting progression of the dissecting hematoma because lethal complications arise not from the intimal tear itself but rather from subsequent course taken by the dissected aorta e.g vascular compromise or aortic rupture.

Once the diagnosis of aortic dissection is suspected on clinical grounds, it is essential to confirm the diagnosis both promptly and accurately.

The diagnostic modalities currently available for this purpose include chest x-ray, aortography, contrast enhanced CT, MRI and transesophageal echocardiography (TEE)or transthoracic

echocardiography(TTE) and intravascular ultrasound. Each modality has certain advantages and disadvantages with respect to diagnostic accuracy, speed, convenience, risk and cost, but none is appropriate in all situation. When comparing the four imaging modalities, one must begin by considering what diagnostic information is needed.

Wheat and collageues were the first who advocated medical treatment of aortic dissection. They established reduction of systolic blood pressure and diminution of the force of the left ventricular ejection as the two primary goals of pharmacological therapy.

Medical therapy is now the initial treatment for virtually all patients with aortic dissection before definitive diagnosis and further more serves as the primary long term therapy in a subset of patients specially these with distal dissection.

DeBaky and colleagues were the pioneers in definitive surgical therapy in the early 1950s. Its purpuse is to excise the intimal tear, oblitration of the false channel by oversewing the aortic edge. Reconstitute the aorta directly or with the interposition of a synthetic graft.

Acute type A dissection requiring surgical management to prevent death from proximal aortic rupture or malperfusion. An integrated operative management as follow; intraoprative transoesphageal echocardiography; hypothermic circulatory arest (HCA) with retrograde cerebral perfusion to replace the aortic arch. Bioglue has been used as an anastomotic adjunct in the repair of type A dissections.

Total arch replacement with an elephant trunk procedure through a median strernatomy should be recommended in patient with type A dissection and the intemal tear in the descending aorta.

The use of biological glues for reaproxmating the layers of the dissected aortic root is associated with certain amount of risk of aortic wall necrosis. Full root replacement could be a preferable techniqeue for treating redissection of the aortic root.

The optimal treatment strategy for those with acute Stanford type B dissection remains some what controversial. Wheat and associates recommended medical treatment, but in 1970 Stanford concluded that there was no major difference in early out come between those treated medically and those treated surgically.

The patient with repaired aortic dissection remains at risk for late aneurysm development and recurrent dissection. Therefore, "anti-impulse" therapy is maintained indefinitely and baseline postoperative chest x-ray, angiographic, and MRI studies are obtained and noninvasive follow-up continued regularly.

Patient with aortic dissection need close follow-up. The main task is to control blood pressure in order to reduce wall stress. A level below 135/80 mmHg is advised. This is the same level as for patient without aortic dissection but arterial hypertension. Beta-blocking agents are preferred combination therapy with other drugs is usually needed to control the pressure.

Regular assessment of the aorta should be performed 1, 3, 6 and 12 months after the acute event, followed by yearly examinations. Most important are the aortic diameter, signs of aneurysm formation haemorrhages at surgical anastomosis or graft stent sites have to be detected.

A dramatic improvement in results can be observed, due to medical and surgical therapy over the last 30 years the international registry of acute aortic dissection (IRAD) study reported hospital mortality of 27% and 29% for types A and B dissection in 464 patients after surgical therapy and 53% and 9% after medical therapy, respectively.

The survival seems to be dependent on the degree of communication, that means the wall stress in the false lumen. The best prognosis was found in non-communicating and retrograde type B (type III) dissection limited to the descending aorta (80% and 86% 2 year survival rate respectively).

The European cooperative study group reported 1 year survival rate of 52%, 69% and 70% in type A (type I, type II) and type B (type III) dissection, respectively. This decreased to 48%, 50% and 60% after 2 years.