

Surgical Treatment of Sub-Renal Abdominal Aortic Aneurysms

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The most commonly used surgical technique is the "flat graft insertion". Flat insertion: the aneurysm is widely opened throughout its length and emptied of its often abundant fibrinous and clotted contents. The lumbar arteries, located in the bed of the aneurysm, are closed by means of cross-stitches. Graft: it is advisable to insert a prosthetic graft which permits a bypass between the healthy vessels upstream and those downstream.

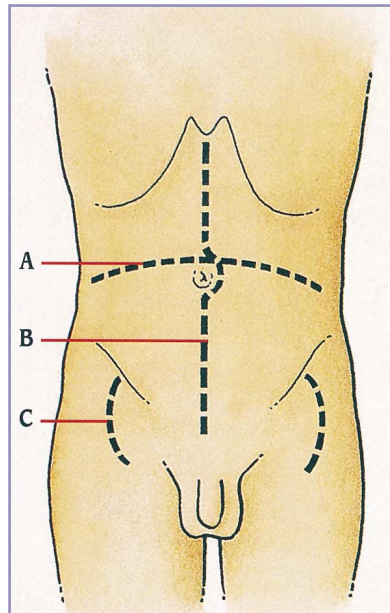


Figure 1 : The various approaches used in this surgical technique are shown here.
 A: Transverse laparotomy: this technique is reserved for aneurysms affecting the sub-renal abdominal aorta not extending to the iliac arteries; this approach route gives rise to less postoperative hernias. It also interferes less with respiratory function.
 B: Median laparotomy: this approach enables the treatment of sub-renal abdominal aortic aneurysms which extend to the iliac arteries.
 C: Femoral artery approach at the level of the femoral triangle. This approach is reserved for aneurysms which extend up to the common femoral artery, requiring the insertion of an aorto-bifemoral prosthesis.

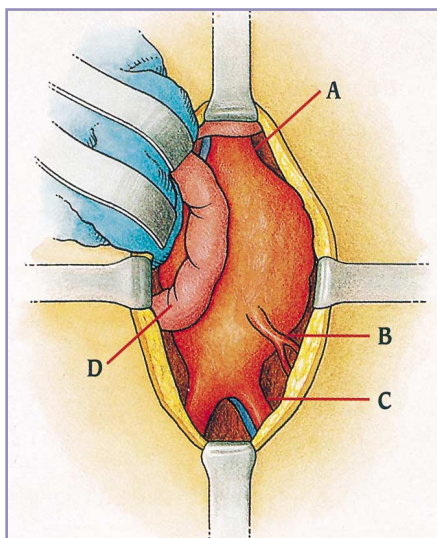


Figure 2 :
 A median xypho-pubic laparotomy was performed.
 A: The upper pole of the aneurysm was dissected.
 B: The inferior mesenteric artery was also dissected as well as the two common iliac arteries (C).
 D: The duodenum comes into view at the right-hand edge of the aneurysm.

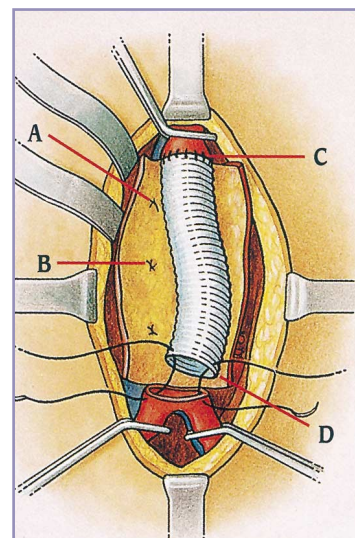


Figure 3 :
 A: The aneurysm is opened longitudinally.
 B: Hemostasis of the lumbar arteries is undertaken using separate cross-stitches.
 C: Proximal anastomosis of the prosthesis has been carried out.
 D: Inferior anastomosis over a cuff involving the two common iliac arteries is in the process of being carried out.

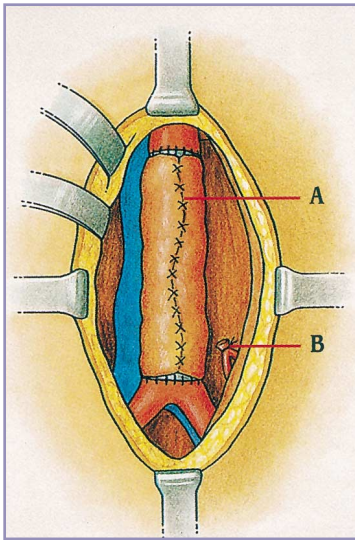


Figure 4 :

A: The shell of the aneurysm has been closed over the prosthesis in order to protect it from the abdominal viscera.
 B: The inferior mesenteric artery has been ligated; when patent it can be reimplanted into the prosthesis.

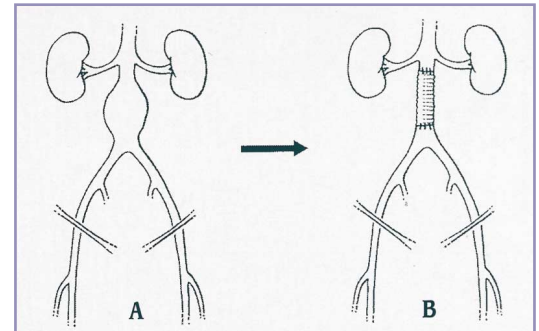


Figure 5 :

A: The aneurysm is confined to the sub-renal aorta.
 B: Treatment consists of inserting an aorto-aortic tube.

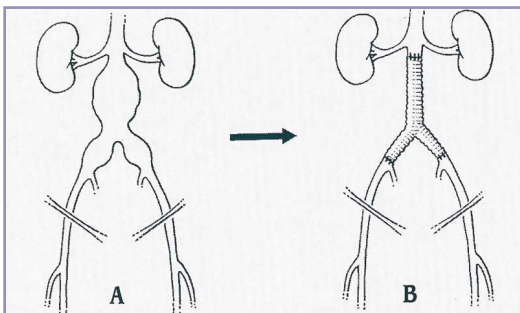


Figure 6 :

A: The aneurysm affects the two common iliacs as well as the sub-renal abdominal aorta.
 B: Treatment consists of inserting an aorto-bi-iliac prosthesis.

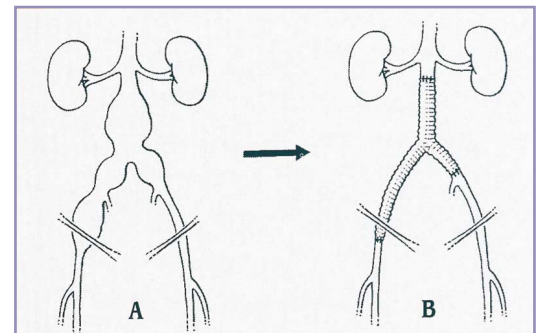


Figure 7 :

A: The aneurysm involves, on the right-hand side, the whole of the iliac artery trunk as far as the common femoral artery; on the left-hand side on the other hand, it stops at the level of the bifurcation between the hypogastric and external iliac artery.
 B: Treatment will consist of inserting a right aorto-femoral, left iliac prosthesis.

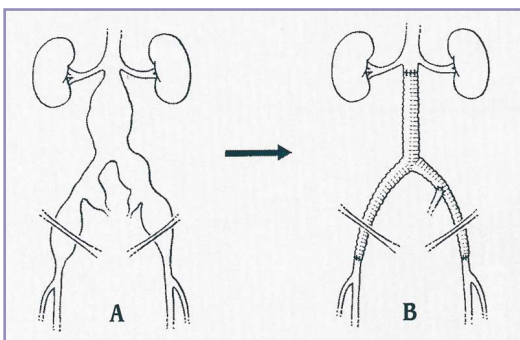


Figure 8 :

A: The aneurysm involves the two iliac trunks up to the common femorals.
 B: A bifurcated aorto-bifemoral prosthesis must be inserted with re-implantation of both or at least one hypogastric artery.

The feared complication of surgical treatment of sub-renal abdominal aortic aneurysms is ischaemia involving the abdominal viscera. This is why, whenever possible, the inferior mesenteric artery must be reimplanted and one and if possible both of the hypogastric arteries should be spared.