Case Report
African Journal of Paediatric Surgery
Vol. 3 (2); Jul - Dec 2006

Bilateral Iliac Aneurysms in a Child

Anévrismes iliaques bilatéraux chez un enfant

Kale, R., Rai, K.M., Singh S., Handa R., Harjai, M. M.
Department of Paediatric Surgery and Vascular Surgery, Army Hospital (Research and Referral), New Delhi, India

Abstract:

Idiopathic arterial aneurysms in childhood are rare and represent a distinct clinical entity. Clinical presentation is by mass effect, ischaemia, growth discrepancy or rupture. Management is complex, and involves exclusion from circulation and placement of vascular grafts. We describe a five-year female child who had bilateral iliac aneurysm with rupture on left side, presenting with sudden tender lump in the abdomen. The child was successfully managed by an Aorto-bilateral external iliac bypass graft. The pelvic circulation was preserved by anastomosis of right external and internal iliac arteries.

Keywords: Aneurysm, Child, Rupture, Bypass graft

Résumé:

Les anévrismes artériels idiopathiques infantiles sont rares et constituent une entité clinique distincte. La présentation clinique est par l'effet de masse, l'ischémie, la disparité de croissance ou par la rupture. La gestion est complexe et implique l'exclusion de la circulation et l'installation de greffes vasculaires. Nous décrivons le cas d'une fillette âgée de cinq ans souffrant d'un anévrisme iliaque bilatéral caractérisé par une rupture sur le côté gauche et une soudaine grosseur douloureuse dans l'abdomen. L'enfant a été traitée avec succès au moyen d'une greffe iliaque externe aorto-bilatérale. La circulation pelvienne a été conservée par l'anastomose des artères iliaques droites externes et internes. ***Mots-clés:*** Anévrisme, Enfant, Rupture, greffe/ pontage.

Introduction

Arterial Aneurysms in childhood are rare. Aneurysms of the abdominal aorta may be due to an inherent defect of collagen biosynthesis, in particular collagen III in the arterial form of Ehlers-Danlos syndrome. Rarer causes include infection, neuro-fibromatosis, trauma from previous umbilical artery catheterization, tuberous sclerosis, and inflammatory causes that include Kawasaki disease, polyarteritis nodosa, Takayasu disease, sarcoidosis, and giant-cell arteritis. Rarely, "idiopathic" aneurysms have been reported in the pediatric and surgical literature.[1,2] These cases may represent a distinct clinical entity. We report a case of a 5-year-old patient with idiopathic giant bilateral iliac aneurysm.

Case Summary

A five years female child presented with pain left leg and lump abdomen of 7 days duration. Examination revealed 7x10 cm retroperitoneal lump in the left flank, which was tender and fixed with well-defined margins. A Bruit was heard over

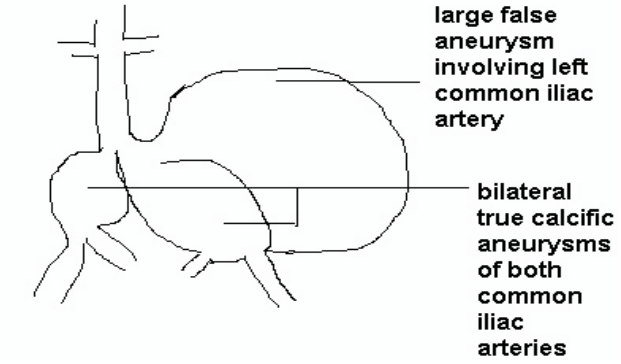


Fig 1: Line diagram showing bilateral common iliac artery aneurysms.

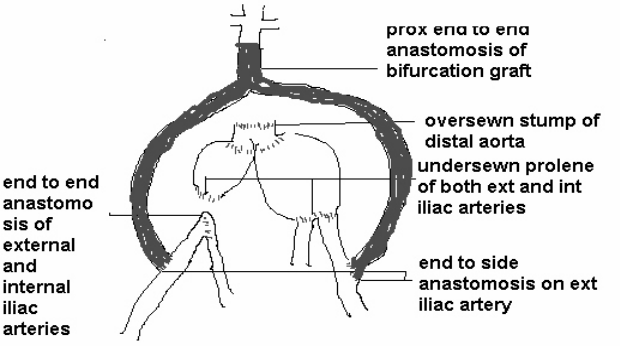


Fig. 2: Line diagram showing completed anastomosis.

Correspondence: Man Mohan Harjai, Department of Neonatal and Paediatric Surgery, Division of Surgery, Army Hospital (Research and Referral), New Delhi 110 010, India. e-mail: harjai101@hotmail.com

Copyright © 2006 African Journal of Paediatric Surgery

the mass. Peripheral pulses were well felt. The X-Ray Abdomen revealed mass effect left half of abdomen with intestines pushed to right side. USG abdomen showed a large distal aortic and left common iliac artery aneurysm with dissection and intraluminal thrombus. There was also associated left hydronephrosis. ECG and Echocardiogram were normal. CECT Abdomen revealed aneurymal dilatation of aortic bifurcation involving both common iliac arteries. The Colour Doppler Study showed flow pattern within the aneurysm with evidence of turbulence with typical 'ying yang' pattern on the periphery. MR Angiography confirmed bilateral saccular true calcific aneurysms of both common iliac arteries measuring 6cm diameter on right and 3.5cms diameter on left involving the aortic bifurcation. Associated large false aneurysm of left common iliac was also noticed (Fig 1). Exploratory laparotomy extending from xiphisternum to pubic symphysis was carried out. After obtaining proximal and distal vascular control the aneurysm was opened and all feeders ligated. The aneurysm was excluded from the circulation by oversewing proximal and distal ends. Aorto-bilateral external iliac PTFE bypass graft (Gore®) carried out by suturing proximal limb end to end to infra renal Aorta and distal limbs end to side to external iliac arteries. The pelvic circulation was preserved by anastomosis of right external and internal iliac arteries (Fig 2). Large amount of clots were removed from pseudoaneurysm with closure of all vascular inlets (Fig 3). Ureterolysis of the stretched out left ureter was performed. Post-operative recovery was uneventful. Follow up of 20 months has revealed no recurrence of common iliac or aortic aneurysms. Colour Doppler study revealed patency of the bypass graft.



Fig 3. Operative photograph showing cavity of pseudoaneurysm after removal of clots.

Discussion

Arterial aneurysms are very rare in children, especially those who have no history of cardiac or vascular malformation, connective tissue disorder, or trauma. The etiology in children includes inflammatory arteritis, dysplasia and idiopathic primary aneurysms.[3] True aneurysms are associated with arterial infection, giant-cell aortoarteritis, autoimmune connective tissue disease, Kawasaki's disease, Ehlers-Danlos or Marfan's syndrome, arterial dysplasias, and congenital-idiopathic factors. False aneurysms bring patient to medical attention when they are associated with tender lumps, extravascular events causing vessel wall injury, disruption or ureteral obstruction.[4,5] The index case was brought to medical attention due to tender lump of the false aneurysm causing ureteral obstruction on left. A case of a huge aneurysm due to fibromuscular dysplasia in an infant has been reported.[6] Bilateral common iliac artery aneurysms that extend to the iliac bifurcation can result in pelvic ischaemia after occlusion of both internal iliac arteries. External iliac artery-to-internal iliac artery endografting is a feasible alternative to maintain pelvic perfusion.[7] We performed anastomosis between external and internal iliac arteries on right side to maintain pelvic perfusion. A case of an idiopathic, infrarenal abdominal aortic aneurysm with dense intramural calcification has been reported in a 12-year-old boy.[8] Kasirajan et al suggested that risk for spontaneous rupture appears to be concentrated among common iliac artery aneurysms exceeding 5 cm in diameter, while those that are less than 3 cm in diameter may fail even to enlarge under observation.[9] In our case the aneurysm on the left side had ruptured and found on exploration to be 6 cm in diameter. This corroborates their suggestion that common iliac artery aneurysm more than 3 cm in diameter should be operated.

References

1. Halpern V, O'Connor J, Murello M, et al. Multiple idiopathic arterial aneurysms in children: a case report and review of the literature. J Vasc Surg 1997; 25: 949-956.

Copyright © 2006 African Journal of Paediatric Surgery

2. Taketani S, Imagawa H, Kadoba K, et al. Idiopathic iliac arterial aneurysms in a child. J Pediatr Surg 1997;

Copyright © 2006 African Journal of Paediatric Surgery