AN INTERESTING CASE OF ARTERIO - VEINOUS MALFORMATION IN THE NECK

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Abstract : An arterio-venous malformation can be acquired and is rarely congenital. It usually presents with cosmetic deformity. If large it may manifest features of haemodynamic changes. Clinical assessment is the mainstay of diagnosis. Arteriography, MR angiography and rarely histopathology may help in clinching the final diagnosis. It is treated with wide excision after ligation of feeder vessels. Herein we present one such case of arterio-venous malformation with review of available literature.

Keywords: Arterio-venous malformations

INTRODUCTION

An arterio-venous malformation is a communication between an artery and a vein that bypasses the capillary bed. This may be either congenital or may be acquired due to trauma by means of a penetrating injury or a sharp blow⁽¹⁾. Incidence of congenital arterio-venous malformations is difficult to determine. It is a relatively uncommon lesion as evident from few reports of such lesions in literature as compared to acquired arterio-venous malformations which has equal distribution in males and females^(2,3). In head and neck arterio-venous malformations present with deformity while adverse haemodynamic effects such as cardiac hypertrophy or decompensation are usually absent. Most frequent complaint is cosmetic deformity and diagnosis is mainly clinical. Arteriography is not always helpful and histopathology may not always be advisable or contributory in diagnosis^(3,4).

CASE STUDY

A 16 year old male presented with swelling over right side of neck since childhood which had gradually progressed to present size (Fig 1). Other than cosmetic deformity patient had no history of trauma, cardiac problems, other similar swellings or any other congenital abnormality. Examination revealed bluish discolouration of skin overlying the swelling which was without ulceration, discharge or bleed. The 5cmx3cmx2cm swelling was

soft, non tender, non compressible, non fluctuant, non pulsatile and non transilluminant. On auscultation there was no venous hum or palpable bruit. Examination of cardiovascular and other systems were non contributory.

Routine haemogram was normal. FNAC reported features of haemangioma. CT scan revealed a localized well defined non-enhancing mass 5cmx4cmx3cm in dimensions (Fig 2). Subsequently MR angiography revealed poor enhancement directing the diagnosis more in favour of lymphangioma. A liberal incision was made under general anaesthesia. Retraction of sternocleidomastoid exposed the whole tumour which was meticulously dissected out with good haemostasis. The internal jugular vein was providing the main blood supply to the tumour. The tumour was excised after ligating all feeding vessels. No blood transfusion was required. Wound was closed with a drain and patient made uneventful recovery (Fig 3).

DISCUSSION

Arteriovenous malformations can be congenital or acquired. Congenital malformations present at birth and come to clinical attention mostly in the 2nd and 3rd decade of life, usually manifesting with pubertal growth spurt, physical trauma or pregnancy. Our case was a 16 year old male in whom the swelling became prominent during puberty. Smaller lesions without haemodynamical imbalance are asymptomatic, presenting with

Fig I: Right lateral view of Neck Mass

Fig II: CT Scan delineating nonenhancing lesion

Fig III: Post operative scar

only cosmetic concern. Larger lesions however will present with heaviness, throbbing pulsations, increased warmth of affected areas and haemodynamic changes^(2,4).

Present patient had a small lesion and primarily presented with cosmetic deformity. He presented with painless swelling without pulsations or bruit and Branham's sign (slowing of pulse with compression of fistula) negative but showed bluish discoloration of the skin overlying the swelling⁽⁵⁾. CT scan (Fig 3) with contrast enhancement was done which showed exact delineation of the mass from the pharynx to the skin. Lack of enhancement by both CT and MR angiography went in favour of lymphangioma.

In cases of arterio-venous malformation though diagnosis is based on clinical examination, the role of arteriography in delineating the precise nature and extent of lesion cannot be over emphasized. Surgical treatment consists of complete resection after ligation of feeding blood vessels. However in the past low dose radiation was tried to induce fibrosis of feeder vessels⁽²⁾. In this case after ligation of the feeding vessels with meticulous dissection, complete resection of the tumour was done; without any need for blood transfusion and with uneventful post operative recovery. Histopathology revealed a variety of blood filled spaces lined by endothelial cells and was suggestive of arterio-venous malformation.

REFERENCES

1. Callender. C. L. : Study of arteriovenous fistula with analysis of 447 cases. *Annals of Surgery* 1920, **71**: 428
2. Sako Y and Varco RC. : Arteriovenous fistulae: results and management of congenital and acquired forms, blood flow measurements and observations on proximal digital arterial degeneration. *Surgery* 1970, **67**: 40
3. Martin S Lindenaue, *Congenital Arteriovenous Fistulae in Vascular surgery* 2nd ed, Robert B Rutherford Ch 86, 912
4. Dry LR, Conn JH, Chavez CM and Hardy JD, *Arteriovenous Fistula: an analysis of 58 cases. Annals of Surgery* 1972, **38**: 154
5. John A Murie, *Arterial Disorders in Bailey and Love's Short Practice of Surgery* 24th ed Russel, Williams and Bulstrode (ed), Arnold, 950

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