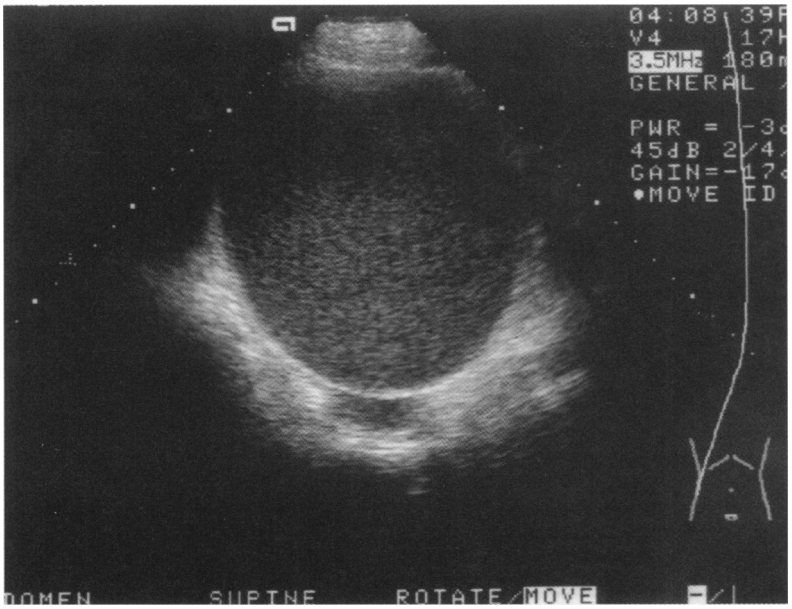

Figure 1 Ultrasonography showing dilated uterine cavity.

On catheterisation of the bladder, however, the external genitalia were noted to be markedly abnormal. There was no vaginal orifice and the hymen was intact and bulging. Secondary sexual characteristics were normal. The patient reported that she had not yet experienced a menstrual period.

After catheterisation 1000 ml of urine was drained. Subsequent pelvic ultrasonography revealed a massively dilated uterine cavity (fig 1), to the level of the umbilicus, with a dilated vagina extending to within 1 cm of the perineal surface.

At operation the hymen was incised and 1500 ml of old blood drained. The patient went on to make a full and uneventful recovery.

Discussion

The overall incidence of imperforate hymen is unknown. In an American series of 254 vaginal malformations 17 of the patients had an imperforate hymen.[1] The authors of the paper estimated the incidence of vaginal agenesis to be one in 10 500 births and vaginal agenesis was 10 times more common than imperforate hymen in their series. Thus it can be seen that imperforate hymen is certainly uncommon.

The incidence of associated acute retention of urine has been stated to be rare.[2] Alternatively in a series of 26 cases of imperforate hymen reported by Calvin and Nichamin, 12 cases of the 26 (46%) presented with acute urinary retention.[3] Urinary retention may occur when the retained menstrual products in the vagina compress the urethra and there is angulation of the urethra caused by pressure on the posterior wall of the bladder, again by retained menstrual products. This condition is not usually associated with other abnormalities.[4]

Other causes of acute urinary retention in children include constipation, urinary infection, postoperative causes, pelvic abscess, trauma, neurogenic bladder, urethral valves, and tumours.[5]

This condition has not been described before in the UK A&E literature. It is reported here to emphasise the importance of assessment of the cause of acute urinary retention in patients whose age and sex make the diagnosis unusual.

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Axillary vein thrombosis mimicking muscular strain

J Louis

Accident and Emergency Department, Southmead Hospital, Bristol

Correspondence to:
Mr Jason Louis, Emergency Department, Frenchay Hospital, Bristol BS16 1LE.

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Abstract

Axillary vein thrombosis may occur on strenuous activity with a clinical picture similar to a simple strain. It carries significant morbidity but a good outcome is possible with early treatment. The aetiology, investigation, and treatment are discussed.
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Keywords: axillary vein thrombosis; upper limb injury; thrombolysis; vascular injury

Case report

A 23 year old man presented with history of aching and tightness in his right arm since rock climbing two weeks previously. While climbing he had reached above his head for a handhold and, on pulling himself up, experienced a sudden sharp pain in his axilla. He had treated himself for a muscular strain with rest and non-steroidal anti-inflammatory drugs but his symptoms had progressively worsened.

The arm was diffusely swollen with a 2 cm × 1 cm bruise in the axilla. The patient had prominent superficial veins bilaterally but those on the right failed to empty on elevation. There was no tenderness and shoulder movements were normal.

Axillary vein thrombosis was suspected and venography was performed showing complete

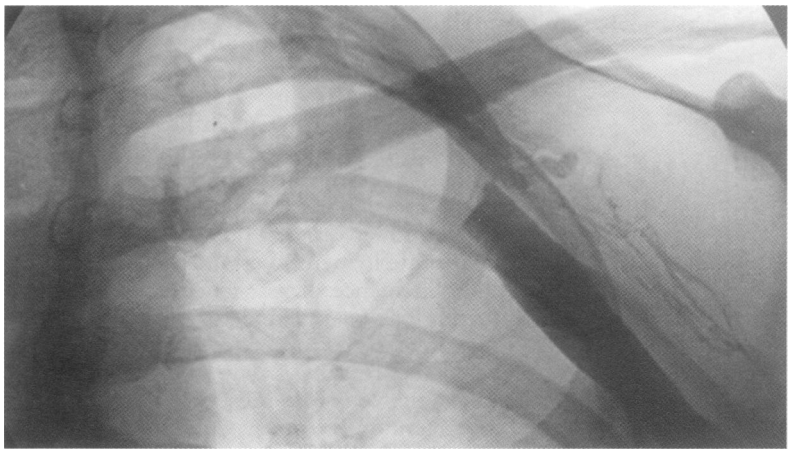

Figure 1 Venogram showing occlusion of axillary vein.

occlusion of the axillary vein (fig 1). The typical "tramline" appearance of contrast flowing around a thrombus was not seen, so computed tomography was performed to exclude an extrinsic lesion compressing the vein; this was normal.

Blood was taken for proteins S and C, antithrombin III, and lupus anticoagulant concentrations, all of which were normal. Anticoagulation was then started with intravenous heparin and continued with warfarin. Three months after discharge the patient has some residual swelling but good function. He will resume rock climbing when anticoagulation has been discontinued.

Discussion

Axillary vein thrombosis is associated with various aetiological factors. It may occur as a primary event due to vigorous upper limb activity or extrinsic venous compression, but is more commonly secondary to central venous catheterisation or systemic illness causing a hypercoagulable state. Overhead positioning of the arm, as in climbing, may cause stretching and intimal tears of the subclavian vein[1] or venous compression in the costoclavicular space,[2] both predisposing to thrombus formation. It accounts for approximately 4% of all deep venous thrombosis and the incidence is increasing with greater use of central venous catheters.[3]

Patients present with swelling (74%), discoloration (68%), or aching (26%) of the affected limb.[4] Other findings may include venous distension and tenderness. Venography is the investigation of choice and will reveal the position and extent of the thrombus. Doppler ultrasound examination may produce false negative results if large collateral vessels are present,[5] however it is non-invasive and a positive result obviates the need for venography.

Morbidity after axillary vein thrombosis is due to pulmonary embolism and chronic venous obstruction. Pulmonary embolism occurs in 5% to 14% of patients[6 7] and is more common after primary thrombosis. Venous obstruction may cause persistent swelling and pain and, although these symptoms are less common than after lower limb deep venous thrombosis, 27% of patients remain symptomatic six months after presentation despite treatment.[7]

Anticoagulation is the commonest form of treatment. This will not recanalise the vessel but is aimed at preventing propagation of the thrombus and embolisation. Although no data specific to upper limb thrombosis are available, it would theoretically be possible to start anticoagulation with a low molecular weight heparin on an outpatient basis.

Surgery is usually reserved for the correction of anatomical abnormalities if symptoms persist after a period of anticoagulation.[3] There have been no large trials of either acute thrombectomy or later balloon venoplasty and their roles remain controversial.

Thrombolysis has been shown to produce patency of the affected vessel in 88% of cases.[6] Only 15% of patients treated this way experience persistent symptoms compared with 36% of those receiving anticoagulation only and 64% of those left untreated. The mean follow up period of these patients was 1.9 years.[7] It has become the treatment of choice in patients presenting within five days of thrombus formation and is most likely to be successful if administered by local infusion, through a long venous catheter. Unfortunately our patient presented too late for thrombolysis to have been effective.

SUMMARY

Axillary vein thrombosis is an uncommon condition that may be associated with a history of injury and so remain unrecognised. If diagnosed early prognosis can be improved by thrombolytic treatment, otherwise anticoagulation alone is the treatment of choice. Surgery should be considered for patients who have anatomical abnormalities and exhibit persistent symptoms.

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