

CASE REPORTS

Bilateral superselective arterial microcoil embolisation in delayed post-traumatic high flow priapism

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Abstract

High flow arteriogenic priapism is uncommon and usually occurs after trauma to the genitoperineal area. The onset of prolonged erection can be delayed and is often relatively pain free. Arteriography in this case illustrated the causative bilateral arteriocavernosal fistulae and pseudoaneurysms. Treatment consisted of staged bilateral superselective metallic microcoil embolisations, resulting in prompt detumescence. There were no complications. The patient had normal erectile function six months later. Recent concerns about erectile dysfunction with the bilateral use of permanent metallic coils appear to be unfounded.

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“Priapism” is the term given to a prolonged, painful penile erection, unaccompanied by sexual desire. It is derived from Priapus, the god of fertility in Greek and Roman mythology, who had a giant phallus.¹ Most cases are due to sluggish pooling of anoxic blood in the cavernous tissues due to venous outflow obstruction. The resultant high cavernous pressure prevents arterial inflow. Prolonged anoxia results in smooth muscle necrosis and fibrosis, leading to permanent erectile dysfunction. Hence, these patients are urological emergencies, requiring immediate treatment to induce detumescence and normal blood flow. High flow priapism is uncommon and associated with increased arterial inflow.² Pain is usually not severe and the partial erection may last for months. It is most commonly seen after genitoperineal trauma, which may damage a feeding cavernosal artery, leading to an arteriovenous fistula and occasionally, to an associated pseudoaneurysm.³ The defects rarely occur bilaterally.⁴ Emergency management of painful priapism should include appropriate analgesia together with measures such as the application of ice packs to try and stimulate increased sympathetic tone and smooth muscle contraction. Blood may be aspirated from one corpus to induce detumescence. The injection of a vasoconstrictor agent such as phenylephrine⁵ should be considered but care must be taken to prevent its entry into the general circulation.

Aspiration of bright red oxygenated blood from the outset together with an antecedent history of trauma suggests high arterial inflow. Colour Doppler ultrasonography and arteriography may then be used to confirm the presence of a fistula.⁶ Many centres now manage this by minimally invasive radiological embolisation of the feeding artery. This case report illustrates that superselective arterial metallic microcoil embolisations are safe and, that recent concerns about the bilateral use of permanent coils are unfounded.

Case report

A 35 year old man sustained a perineal injury falling astride a ladder. He noted frank haematuria and was admitted a day later. Some perineoscrotal bruising was observed. He had a non-tender, flaccid penis with a normal urethra. Investigations including urinalysis and flow rates were normal on discharge the next morning.

Five days later he developed a relatively painless priapism and reattended. This presentation was suggestive of a high flow priapism, which was confirmed by corporeal aspiration of bright red oxygenated blood.

Free flush arteriography was then performed and demonstrated bilateral traumatic pseudoaneurysms of the pudendal branches of the internal iliac arteries, causing arteriocavernosal communications (fig 1).

Superselective embolisation was undertaken using metallic microcoils, initially on the left side, which resulted in detumescence. In view

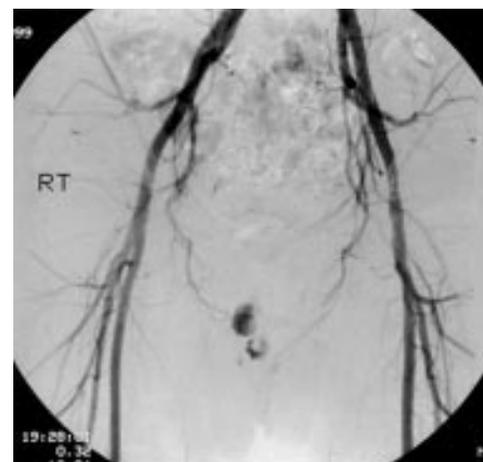


Figure 1 Free flush arteriogram showing bilateral pudendal arteriovenous fistulae.

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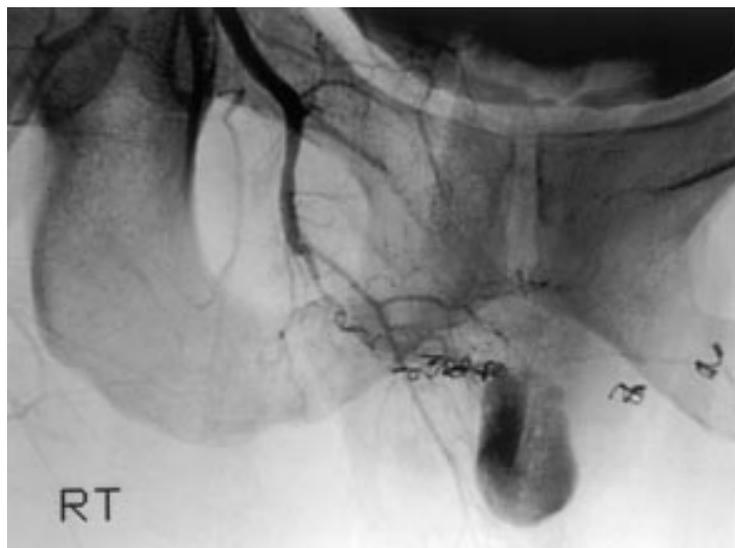


Figure 2 Final embolisation study showing the position of the metallic microcoils.

of this, the right side was left alone but unfortunately the high flow priapism returned in 12 hours. Repeat arteriography showed that the right sided defect persisted and there was filling across the midline into the left fistula. Embolisation of the right side was successful in achieving complete resolution, with no early complications (fig 2). He had normal erectile activity six weeks later and review at six months was unremarkable. The patient was discharged.

Discussion

High flow priapism as a result of traumatic arteriocavernosal communication is relatively uncommon. Selective embolisation of the feeding artery is now commonly used to treat the condition in a minimally invasive fashion. This technique was first employed with autologous clot, in 1977.⁷ Since then, several reports have been published, successfully using agents such as gelatin sponge and *N*-butyl-cyanoacrylate. Autologous clot and gelatin agents are not radio-opaque, making localisation and precision of occlusion difficult.⁸ This means that there is risk of excessive perineal tissue necrosis and infection when these agents are used.⁹ *N*-butyl-cyanoacrylate is not readily available and needs considerable expertise to use. As a result, the use of metallic microcoils has been advocated, as they can be very precisely deposited to produce focal occlusions. Their permanent nature of occlusion in contrast to other agents means that they conceivably could pre-

Learning points

- Priapism is a urological emergency and low flow anoxic cases need prompt treatment to prevent permanent erectile dysfunction.
- High flow arteriogenic priapism is uncommon and often related to genitoperineal trauma, which causes arteriocavernosal fistulae.
- The diagnosis is easy to make from the history and aspiration of bright red oxygenated blood from the corpora; colour Doppler ultrasonography and arteriography can confirm the fistula(e).
- Conservative measures are unlikely to control the high blood flow. Selective embolisations of the feeding arteries can be undertaken. Metallic microcoils can be radiologically deposited very accurately and safely to produce focal occlusions even when there are bilateral defects, without causing subsequent erectile dysfunction.

vent the restoration of potency and therefore, their utilisation in bilateral defects has been discouraged.⁸ However, this case shows that they can in fact, successfully be used on bilateral fistulae in a superselective manner without affecting potency. The case also highlights the importance of warning men who have had even minor perineal trauma about the possibility of developing delayed high flow priapism, well after the initial traumatic episode.

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