

Functional medicine

A very rare case of delayed catastrophic arterial bleed post-vaginoplasty

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ABSTRACT

The gold standard for male to female genital reconstruction in the UK is vaginoplasty with penile and/or scrotal skin for neovagina formation. We present a rare case of a major haemorrhage in a 46-year-old patient, 26 days post-vaginoplasty. An urgent computed tomography scan identified a large retrovesical collection, with high-density contents in keeping with recent haemorrhage, containing a 6mm pseudoaneurysm within the right lateral wall. Following resuscitation, the patient was urgently treated with successful embolization of the feeding artery (branch of the prostatic artery), with pushable coils. We highlight the importance of expedient, life-saving management in a rare post-operative complication.

Introduction

Trans-individuals with dysphoria towards their genitalia, meeting WPATH guidelines,¹ may be eligible for genital reconstructive surgery. In the UK, the gold standard genital procedure for trans-feminine and trans-female individuals is vaginoplasty, using penile and/or scrotal skin for neovagina formation.

Vaginoplasty is a one-stage procedure performed through a midline perineal incision. The surgical procedure is characterised by multiple steps: bilateral orchidectomy, neovagina cavity formation, penectomy (preserving the pedicled, dorsal neurovascular bundle), clitoroplasty, urethral reconstruction (shortening, spatulation and bulbospongiosus/corpus spongiosus excision), sourcing the vaginal cavity lining (most commonly penile skin, though free scrotal skin grafts/pedicled scrotal flaps occasionally used) and labia minora and majora formation. The patient is catheterised (12Fr urethral 2-way catheter) and a 10Fr Redivac drain is inserted adjacent to the neovagina. A vaginal pack is inserted and a pressure dressing applied, followed by a six-day post-operative admission. On day 6, the vaginal pack is removed and the patient is taught neovagina self-dilatation prior to discharge home.²

Post-operative complications vary from minor to major, including those shown in Table 1³

We present a rare complication, never previously reported, of an arterial bleed 26 days post-vaginoplasty, to increase awareness amongst healthcare professionals potentially responsible for the post-operative

care of these patients.

Case presentation

A 46 year-old patient underwent a vaginoplasty. Other than a tight proximal urethral stricture negotiated cystoscopically, the operation was uneventful with satisfactory intra-operative haemostasis. On days 1–2 post-operatively, the patient experienced urethral bleeding managed with manual pressure, topical haemostatic agents (FloSeal®), intravenous tranexamic acid and a 3–0 vicryl haemostatic suture. The patient's haemoglobin dropped to 4g/dl, subsequently requiring blood transfusion. She recovered and was discharged on day 6 post-operatively.

She was readmitted with sepsis 18 days post-operatively. A computed tomography contrast scan of the abdomen and pelvis (CTAP) revealed a 4.1x4.0 × 4.8cm enhancing collection in the retrovesical pouch, containing multiple gas locules. The collection extended inferiorly into the subcutaneous neolabial layer and superiorly, superficially to rectus abdominis. She was immediately commenced on intravenous antibiotics.

On day 26 post-operatively, a ward-based major haemorrhage call was initiated, following a sudden, spontaneous bleed from the urethra-to-skin anastomosis (haemoglobin 10.5g/dl-4.9g/dl). The exact bleeding point was not externally visible. Manual pressure, tranexamic acid and topical haemostatic agents were initially used. A pressure

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Table 1

Table showing potential surgical complications (first column) and the risk (percentage) with various vaginoplasty techniques (second and third columns).

Surgical complication	Vaginoplasty technique used	Vaginoplasty technique used
	Penile inversion	Penoscrotal
General		
Bleeding, requiring transfusion	4.1%	2.5%
Rectum		
Rectal perforation	2.5%	2.7%
Rectovaginal fistula	1.5%	0.3%
Neovagina		
Introitus stricture	14.3%	2.1%
Vaginal stenosis	7.2%	9.6%
Vaginal prolapse	2.8%	2.7%
Clitoris		
Clitoral necrosis	2.8%	0.6%
Urethra		
Urethral meatus stenosis	16.3%	10.7%



Fig. 1. CTAP showing the retrovesical collection with a 6mm pseudoaneurysm (marked by arrow).

dressings were applied and the patient had a CT angiogram triple phase scan for bleeding point investigation. This showed an increased retrovesical collection size (from 4.1x4.0 x 4.8cm to 4.4x3.9 x 7.3cm) with gas volume reduction, but high-density content increase in keeping with recent haemorrhage. In addition, there was a 6mm mycotic

pseudoaneurysm within the right lateral wall of the collection, shown in Fig. 1.

The patient was taken to the interventional radiology (IR) suite for urgent embolization of the pseudoaneurysm. An ultrasound-guided right common femoral arterial puncture was performed with selective catheterisation of the right internal iliac artery. Angiogram confirmed a pseudoaneurysm arising from a prostatic artery branch with no active haemorrhage. The feeding artery was catheterised and embolized with pushable coils, with successful pseudoaneurysm embolization. Pre and post embolization angiograms are shown in Fig. 2.

A CTAP was performed 4 days later, revealing interval reduction in the retrovesical collection, with no residual pseudoaneurysm. The patient had no further bleeding and was discharged home 4 days later with oral antibiotics (metronidazole, co-trimoxazole, doxycycline). There were no adverse functional or cosmetic outcomes.

Discussion

Improved access to specialist services and increased acceptance of gender dysphoria as a phenomenon has led to an apparent increase in its prevalence. There is good evidence to show that surgery has a positive impact on these patients' psychological outcomes.⁴ Bleeding post-vaginoplasty is a common complication.⁵ Late vaginal bleeding is usually caused by granulation tissue within the neovagina. When it occurs early (days 1–2 post-operatively), bleeding from the cut edge of the corpus spongiosus surrounding the bulbar urethra is the most common cause. This can usually be managed by external pressure, application of topical/intra-urethral agents (e.g. lignocaine with adrenaline or tranexamic acid) and haemostatic suturing.

In the unusual circumstance that bleeding cannot be controlled conservatively, a bleeding point cannot be visualised and haemoglobin is compromised; a CT angiogram can be used to identify the bleeding point with embolization thereafter. If no IR facilities are available and conservative methods are unsuccessful, return to theatre or stabilisation for specialist centre transfer may be necessary.

This case depicts a rare complication of mycotic pseudoaneurysm formation secondary to an infected post-operative retrovesical collection. This patient had no identifiable risk factors (normal coagulation, no co-morbidities, routine venous thromboembolism prophylaxis).

Conclusion

Early complications post-vaginoplasty are usually managed by the tertiary hospital performing the procedure. However, late, life-threatening complications, as in this case, may present to any hospital.

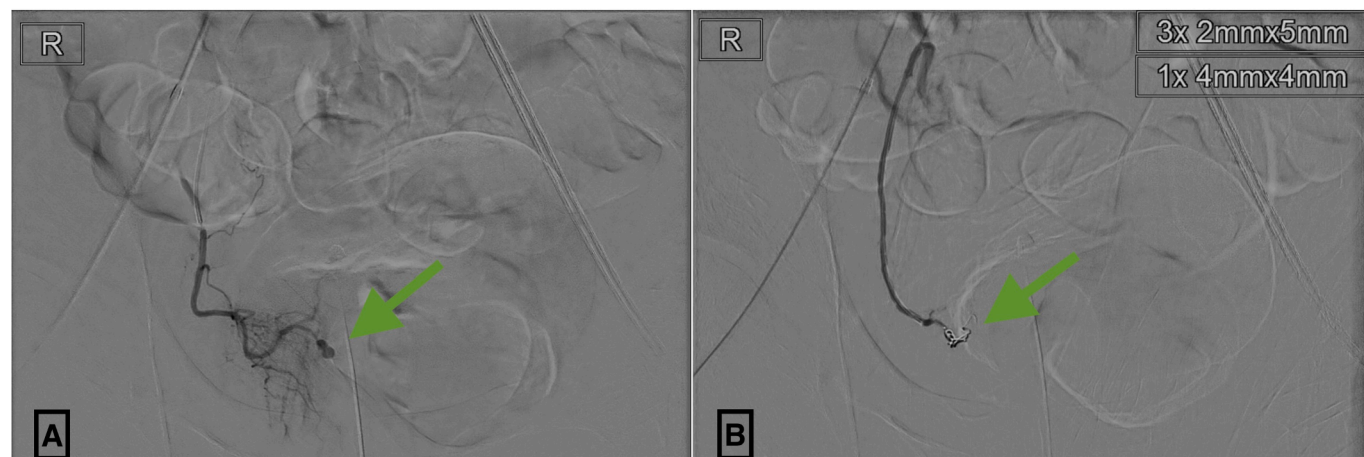


Fig. 2. Pre-embolization (A): Angiogram image showing prostatic artery filling with the pseudoaneurysm at the distal end (marked by arrow). Post-embolization (B): Angiogram image following pseudoaneurysm embolization using pushable coils (3 x 2 x 5mm, 1 x 4 x 4mm), with no further filling (marked by arrow).

It is important that healthcare professionals can differentiate small-volume vaginal bleeding (resulting from granulation tissue) from large-volume bleeds and its potential implications. It is vital that management is expedited to avoid adverse outcomes. Management should consist of conservative methods for immediate haemostatic control. Investigation of the bleeding point and collaboration with IR for embolization may be required in the haemodynamically unstable patient.

This case highlights the potential gravity of a post-vaginoplasty arterial bleed and the need for an expedient, multidisciplinary approach of diagnosis, investigation and management.

Ethics

The patient has provided written consent for the publication of this case report.

Declaration of competing interest

None declared.

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