CASE REPORT

Tissue regeneration mesh reinforcement during abdominoplasty for severe myoaponeurotic laxity after pregnancy

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SUMMARY

A 28-year-old woman who was 6 months postpartum following her second pregnancy presented with a history of painful protrusion and weakness of her abdominal wall musculature. Despite having had physiotherapy there was no improvement in muscle strength. MRI scan of her abdominal wall was performed which showed significant diastasis of the recti but no herniae were seen. The effect of this on the patient's quality of life was marked, and therefore abdominoplasty with mesh reinforcement was planned. In order to limit the consequences of infection, a Strattice mesh (a tissue regeneration mesh) was selected. Standard panniculectomy and plication of the rectus sheath using non-absorbable sutures was performed, and the mesh sutured to the anterior abdominal wall using an on-lay technique. The patient recovered well from the procedure, with a significant return of functionality to her abdominal wall, enabling her to return to work some 3 months later.

BACKGROUND

The incidence of secondary rectus diastasis in the third trimester of pregnancy is reportedly as high as 66%, of which 30–60% of cases persist beyond pregnancy.¹ Abdominoplasty is a well-established procedure for the repair of rectus diastasis in order to improve cosmetic as well as functional results. In severe cases of myoaponeurotic laxity, synthetic meshes have been used. Although there are limited data in the literature to substantiate the use of synthetic meshes, there have been reports of infectious complications following their use.² We describe the use of a tissue regeneration mesh, which to our knowledge has not previously been used in the context of abdominoplasty for myoaponeurotic laxity.

CASE PRESENTATION

A 28-year-old woman who was 6 months postpartum following her second pregnancy presented with a history of painful protrusion and weakness of her abdominal wall musculature (figure 1). Notably she was unable to lift her head or feet off the bed, requiring her to turn or roll to the side in order to get up. She was also unable to lift, which had made it impossible for her to work. She was otherwise well and had no significant medical or surgical history.

Figure 1 Lateral preoperative photograph demonstrating significant tissue laxity of the abdominal wall.

INVESTIGATIONS

As the patient had no abdominal muscle tone it was not possible to clinically exclude any herniae, and therefore an MRI scan of her abdomen was performed. In this case, laxity only was demonstrated with no other abnormality present (figure 2).

DIFFERENTIAL DIAGNOSIS

Having excluded abdominal herniae, the diagnosis was apparent. Other causes of abdominal distension should also be considered.

TREATMENT

Abdominoplasty was performed with panniculectomy of redundant skin below the level of the

To cite: Uzair S, Babar Z, Sutton PA. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-010306

Figure 2 An MRI was performed to exclude any contributing abdominal wall herniae. Normal appearances are seen here.

umbilicus. The rectus muscles were plicated with non-absorbable sutures. Given the significant laxity within the abdominal wall, we felt that plication alone would be insufficient and therefore a Strattice tissue regeneration mesh was placed and sutured to the abdominal wall in an onlay fashion (figure 3). Two suction drains were placed into the subcutaneous space, which were removed prior to discharge 3 days later.

OUTCOME AND FOLLOW-UP

The patient suffered no morbidity as a result of the procedure and has so far been followed up for 2 years. She felt that the procedure she had had was 'life changing', as in addition to the improved cosmetic results her abdominal wall muscle function had returned to near normal (figure 4). Importantly she was mobile and able to both look after her young family and to return to work.

DISCUSSION

The use of synthetic mesh in abdominoplasty has been associated with infectious complications.² A further four studies however demonstrate no infection, dehiscence or extrusion of mesh.^{3–6} The number of patients in these studies was limited (ranging from 18 to 52), and included polypropylene and vicryl meshes. The authors report generally stable repair, even in cases of severe myoaponeurotic laxity, with follow-up ranging from 6 to 54 months.

This is the first reported case of the use of Strattice, a sterile reconstructive tissue matrix, for this indication. Strattice is derived from porcine dermis and undergoes processing which removes cells and significantly reduces the key components

Figure 3 Intraoperative photograph demonstrating the Strattice mesh secured in an onlay fashion.

Figure 4 The patient was delighted with both the cosmetic and functional results. A postoperative oblique photograph taken at 2 years postprocedure.

responsible for the xenogeneic rejection response.⁷ In this setting, a Strattice mesh would become incorporated into the tissue resulting in a soft but strong abdominal wall instead of the thick scar plate frequently observed with non-absorbable meshes. Infection in a mesh of the size required for this repair would be potentially disastrous. We recommend the use of Strattice in selected cases to provide adequate tissue reinforcement and potentially reduce the risk of infection.

Learning points

- ▶ Patients with severe abdominal wall laxity may report symptoms which are often disabling.
- ▶ Surgical intervention may be appropriate if conservative management has failed.
- ▶ Routine use of mesh repair is not universally adopted.
- ▶ Although the reported number of cases of mesh infection with polypropylene and vicryl is small, the consequences can be grave and therefore we recommend that the use of a tissue regeneration mesh should be considered.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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