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## Case Report

## Pregnancy after abdominoplasty with mesh placement: A case report

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## ABSTRACT

A 32-year-old Caucasian female, who had an abdominoplasty with sublay mesh placement for rectus abdominis diastasis became pregnant one year later. The gestation was uneventful and the baby was born healthy after 40 weeks of pregnancy. During and after the pregnancy the patient's abdomen had been evaluated intensively and there was no recurrence of rectus abdominis diastasis. In this particular case the tissues of the abdominal wall elongated as the foetus grew larger, except for the site where the rectus diastasis has been corrected. The experience with this particular case does not assure that all patients will have the same uneventful outcomes as described. Nonetheless, it shows that pregnancy after abdominoplasty with mesh placing for rectus abdominis diastasis can be safe for both mother and child. However, each patient must be informed about the risks of pregnancy in this particular situation and professional follow-up is mandatory when pregnancy does occur. This is, as far as we know, the first case report of an uneventful pregnancy after rectus abdominis diastasis repair with the placement of a sublay mesh and abdominoplasty.

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## Introduction

Abdominoplasty with mesh placement for rectus abdominis diastasis in females is rarely performed. If this is the case this is usually after multiple pregnancies and only in patients without a pregnancy wish in the future. Prior to surgery the patient should be informed and made aware of the risks of having a future pregnancy. However, young non-sterilised females, willingly or not, may get pregnant after surgery. A difficult situation can arise if these pregnant patients ask the surgeon what will happen to their abdomen and whether carrying the pregnancy to full term is justified. Only scarce evidence is available about this topic, but there are no reports about pregnancy after abdominoplasty with mesh.<sup>1–3</sup> Therefore, deciding on the course of action in these situations is completely based on the experience and knowledge of the surgeons and shared decision with the patient. In this paper, a case is described studying the safety and effects of pregnancy one year after abdominoplasty with mesh placement.

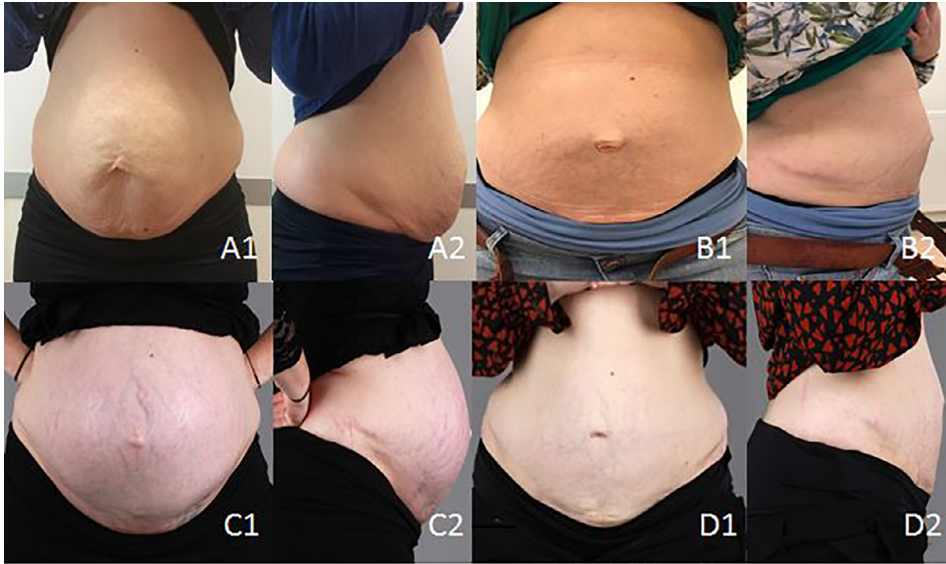
## Case report

The patient, a 32-year-old Caucasian female, presented consultation complaining of lower back pain and abdominal deformity as a consequence of rectus abdominis diastasis secondary to two previous pregnancies, the last one being a dichorionic diamniotic (DCDA) twin pregnancy. At the time of the consultation, the partus was 18 months prior. The patient initially tried physical exercise and wore an abdominal corset postpartum but these actions did not sufficiently relieve her symptoms. When questioned about the desire of having a future pregnancy, she mentioned that she did not have an active desire for more children. At the physical exam, she displayed excessive abdominal skin, stretch marks, a low muscle tone and a severe rectus abdominis diastasis at the abdominal palpation. The abdominal ultrasound showed a rectus abdominis diastasis varying between 2.5 and 4.5 cm. An abdominoplasty with sublay mesh placement was performed under general anaesthesia by the surgery team consisting of a plastic surgeon and a gastro-intestinal surgeon with expertise in abdominal wall defects. Firstly, the plastic surgeon performed the abdominoplasty by making a suprapubic incision extending laterally to the anterior iliac crest and removing the excess skin and fat with preservation of the umbilical stalk. Secondly, the surgeon performed the rectus diastasis repair by placing a mesh (7 cm, longitudinal axis) between the rectus abdominis muscle and posterior rectus sheath. The mesh was secured by trans-facial sutures anteriorly using 0-0 polypropylene, spacing 2–3 cm from each other, with consideration for the neurovascular bundles. Followed by the closing of the anterior rectus fascia with the use of 0-0 polypropylene on a continuous suture, which completed the rectus diastasis repair. The circumcised umbilical stalk was then pulled through the skin flap. 2-0 Vicryl, 3-0 V-Loc and 3-0 Monocryl were used to close the layers properly. The patient was discharged the second postoperative day and had an uneventful outcome, she was very pleased with the cosmetic result (Fig. 1. A and B).

Approximately one year after the operation the patient reported she was pregnant. The pregnancy was uneventful and followed the usual pre-birth examinations, the foetus showed normal and healthy growth. At 40 weeks of pregnancy, a healthy child was born via normal vaginal delivery. After giving birth the patient's weight returned to the pre-pregnancy weight in a couple of weeks. No excess skin or striae was visible at clinical examination (Fig. 1. C and D). Moreover, there were no signs of rectus diastasis on physical examination or ultrasound.

## Discussion

Rectus abdominis diastasis (RD) is characterised by thinning and widening of the linea alba combined with laxity of the ventral abdominal musculature, resulting in abdominal protrusion. A well-known cause for RD is elevated intra-abdominal pressure, which can occur in pregnancy and obesity.<sup>4,5</sup> In the future more and more women of childbearing age will undergo surgery for repair of rectus abdominis diastasis. The patient will be informed that it is not advised to get pregnant again after the procedure. For one, the pregnancy may demolish the aesthetic result of the procedure, but more importantly impaired flexibility of the abdominal wall may endanger the health of both mother



**Fig. 1.** (1) Frontal view and (2) Lateral view: (A) Preoperative aspect of the 32-year old female with rectus abdominis diastasis (B) Aspect of the abdomen after abdominoplasty with sublay mesh placement. (C) Patient when 38 weeks pregnant (D) Few months after giving birth. Note the significant skin retraction and restoration of the abdominal contour.

and foetus. Therefore, the safety and risks of pregnancy after abdominoplasty must be better understood.

Literature search resulted in only a few articles about this topic<sup>1–3,6</sup> and no reference was found about pregnancy after rectus abdominis diastasis repair with placing of a mesh and abdominoplasty.

Menz, Borman and Nahas<sup>1–3</sup> all reported an uneventful pregnancy and partus in a patient who had undergone an abdominoplasty, but, without the placing of a mesh. Alipour and Eskandarie<sup>6</sup> revealed in their systematic review that uneventful pregnancy and delivery can be anticipated in breast cancer survivors who had breast reconstruction with transverse rectus abdominis myocutaneous (TRAM) or its derivatives with minor negative effects regarding the abdomen or the newborn child.

These cases show that the fibrotic tissue formed secondary to rectus diastasis repair and responsible for keeping the medial edges of the rectus abdominis muscles together is likely strong enough to withstand the intraabdominal pressure changes during pregnancy. However, the consensus is that in the early postoperative period the fibrotic tissue might not be strong enough to endure pregnancy and strong mature fibrotic tissue will only be completely formed approximately one year after surgery. One year was also the post-operative period after which the patient, presented in the case, became pregnant. However, the exact time needed is speculative since there is limited data on the wound-healing trajectory and the tensile strength of fibrotic tissue in humans.<sup>7</sup>

Next to the fibrotic strength, it is highly possible that the hormones released during gestation, which enhance tissue vascularization and increase skin elasticity, might also play a part in effectuating an uncomplicated pregnancy after abdominoplasty.<sup>8</sup> Most likely the hormones caused an increased elongation and stretching of the transversus abdominis, internal- and external oblique reducing the forces on the abdominal rectus muscles and the surgery site.

It is important to highlight the fact that in this particular case the patient received a mesh that only covered 7 cm of the longitudinal abdominal axis, where in other cases a longer mesh might be needed to close the abdominal wall defect. For this reason, pregnancy after a longer abdominal wall repair should be approached more cautiously, as this may cause more severe restrictive problems for mother and child.

## Conclusion

This case report shows that pregnancy can be safe after abdominoplasty with mesh placing for rectus abdominis diastasis for both mother and child in some patients. However, it must be stated that each patient should be informed about the risks of pregnancy in this particular situation and professional follow-up is mandatory when pregnancy does occur.

## Declaration of Competing Interest

All authors declare no conflicts of interest.

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