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Pregnancy post-laparoscopic hysteropexy

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Introduction

Laparoscopic hysteropexy is uterine preservation surgery for women with uterovaginal prolapse, giving strong apical support while conserving fertility. This procedure has been detailed in a video article (Rahmanou et al. 2014a) and intermediate term follow-up results have previously been published (Rahmanou et al. 2014b). There is no reported pregnancy following this technique of uterine preservation surgery to-date. This case report demonstrates that pregnancy, with live birth at term, is possible after this procedure.

Case report

A 40-year-old Afro-Caribbean woman presented with marked symptoms of prolapse, eight months after her third spontaneous vaginal delivery of an infant weighing 4.3 kg. This delivery was complicated by shoulder dystocia.

Her main complaint was feeling a lump and dragging sensation per vaginam and a 'loose' feeling during intercourse. She also had posterior compartment symptoms describing difficulty with bowel evacuation requiring digitation per vaginam. Her urinary symptoms were predominantly urgency with urge incontinence. Examination revealed a bulky cervix that descended to within 1 cm of the introitus on straining (point C at -1 cm). There was perineal deficiency with some associated anterior and posterior prolapse. Following a course of physiotherapy for pelvic floor muscle training, she still had poor pelvic floor muscle tone.

Despite no plans for future pregnancy, she elected to have laparoscopic uterine preservation surgery. This procedure places a bifurcated polypropylene type-1 monofilament macroporous non-absorbable mesh (ProLite™ Atrium Medical Corporation, Hudson, NH, USA), completely encircling the cervix at the level of the internal os. The mesh bifurcation is placed lateral to the uterine arteries. The mesh is then transfixed to the sacral promontory, elevating and supporting the cervix and uterus (Rahmanou et al. 2014a).

She was informed of the lack of long-term follow-up data and the absence of information regarding pregnancy following this procedure. She was informed that should she become pregnant, caesarean section was indicated.

She underwent laparoscopic hysteropexy and posterior colpoperineorrhaphy without complication and had an uneventful recovery. She presented with satisfactory outcome, at the routine 3-month postoperative visit; Point C on the POP-Q score at -7 cm, with no anterior and posterior prolapse.

At seven months post-hysteropexy, she presented at 41 years of age, with an eight-week natural conception with the same partner, electing to continue with the pregnancy.

Her case was discussed at a multidisciplinary meeting between the obstetric and urogynaecology team. As the effects of hysteropexy on pregnancy were unknown, arrangements were made for consultant-led care. She was monitored with serial growth scans and umbilical artery Dopplers at 28, 32 and 36 weeks' gestation. The aim was for delivery by elective lower segment caesarean section at 39 weeks' gestation.

Uterine artery Dopplers at 23 weeks showed significant right angulation of both arteries at the level of the internal os (corresponding in all probability with the site of the Prolene mesh). The pulsatility index (PI) and resistance index (RI) of both uterine arteries remained within normal limits without any notching (mean RI = 0.57). Serial growth scans showed normal growth with normal umbilical artery Dopplers.

A low posterior placenta was detected during her antenatal scans, remaining so for the pregnancy duration. Elective lower segment caesarean section was undertaken at 38 weeks' gestation for this reason. During caesarean section, the hysteropexy Prolene mesh was detected under the peritoneum below the lower segment the uterus had distended with pregnancy cranial to the mesh. Consequently, the mesh did not interfere with the uterine incision or delivery. A live male infant was successfully delivered, weighing 3.29 kg. The caesarean section was complicated by a post-partum haemorrhage of 1,500 ml due to an atonic uterus, which was managed with uterotonics and a 2-unit blood transfusion. She was discharged on day four, re-presenting on day seven with mild/moderate pre-eclampsia, managed with two different antihypertensives for two months, postnatally.

On examination at the three-month review post-delivery, there was good apical support with point C at -6 cm. There was no posterior prolapse (bp at -3 cm) but moderate anterior prolapse with point Ba at 0 cm. As she was still breast-feeding and, being so soon post-delivery, referral to the physiotherapy department was made for pelvic floor muscle training. Arrangements were made for further urogynaecology follow-up after completing breast-feeding and the course of physiotherapy.

Discussion

Limited data is available regarding pregnancy risks and outcomes following uterine preservation surgery. Currently, two case reports of full-term pregnancy following Prolene mesh augmented sacrohysteropexy have been published (Lewis and Culligan 2012; Busby and Broome 2010). Both used a Prolene mesh transfixed to the posterior cervix with non-absorbable sutures. Prior experience in our unit showed a high risk of the mesh avulsing from the cervix with this technique (pers. comm.). Therefore, in 2005, we developed the cervical encirclage method; opening the broad ligament lateral to the uterine arteries (Rahmanou et al. 2014a). With over 500 cases to-date using this technique, no mesh avulsion has been detected. The

potential concern with our technique is constriction of the uterine artery and the potential for compromised blood flow and growth restriction in pregnancy. As demonstrated in this case report, there were normal uterine artery Dopplers and fetal growth was normal.

All case reports, including this one, required delivery by scheduled caesarean section. The mesh around the cervix is comparable with abdominal cervical cerclage and cervical dilatation would be impossible in labour. Although potential difficulty with caesarean section due to mesh was a concern, a well formed lower segment had developed above the mesh. The delivery was straight forward, aside from the posterior placenta praevia, which exacerbated post-partum haemorrhage. It is our opinion that this was coincidental and unrelated to the hysteropexy mesh.

At review 2 months post-delivery, there was good apical support, but marked anterior prolapse, which may require surgical treatment if conservative management fails.

This case suggests that uncomplicated pregnancy to full term is possible following this technique and pregnancy has no harmful affect on apical support in women post-hysteropexy. More cases with longer follow-up are required to consolidate the data for pregnancy and hysteropexy.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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