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Case Report

Prolapse in pregnancy: a case report

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ABSTRACT

Pelvic organ prolapse in pregnancy is uncommon. It poses unique maternal and foetal risks which must be carefully managed in the antepartum, intrapartum, and post-partum period. This case series and literature review discusses two cases of young female patients without significant risk factors presenting in their third trimester of pregnancy with symptoms of pelvic organ prolapse (POP). Both patients were treated conservatively and went on to have an uncomplicated vaginal delivery at term. These cases highlight the need for routine pelvic floor assessments in the antenatal period to detect the early signs of POP. The ensuing literature review provides updated insights into the predisposing factors, diagnosis, and management of POP, including the importance of managing the psychosocial implications of the condition.

Keywords: Uterine prolapse, Pregnancy, Pelvic organ prolapse

INTRODUCTION

Pelvic organ prolapse (POP) is a common pathology in which the organs of the pelvis descend into the vagina, and is a well-defined condition amongst high parity, post-menopausal populations. POP during pregnancy is a rare event, as uterine prolapse is estimated to only affect one in 10,000–15,000 pregnancies, with steadily decreasing incidence due to decreasing parity.[1] Pregnant patients with POP commonly present with symptoms of pelvic heaviness or pressure, back pain, sexual dysfunction, urinary retention, incontinence, or a protrusion from the vagina, often during the third trimester. Diagnosis is confirmed by clinical examination and in most cases the prolapse subsequently resolves following delivery. Uterine prolapse, a condition characterised by the descent of the uterus into or beyond the vaginal canal, is predominantly observed in post-menopausal women with high parity. When it manifests during pregnancy, it becomes a rare and complex clinical entity. The physiological and anatomical changes during pregnancy can exacerbate underlying weaknesses in the pelvic support structures, leading to prolapse.

This condition not only causes discomfort and complications during pregnancy but also has significant implications for the mode and safety of delivery, impacting both the mother and the foetus. An expanding body of literature has sought to understand the complexities of uterine prolapse in pregnancy, however

available data is out-dated, and questions remain unanswered. The risk factors for POP in the pregnant population are similar to that of the general population-increased age, family history, connective tissue diseases, high parity, previous high infant birth weight and previous vaginal delivery. Further conditions increasing intra-abdominal pressure such as chronic constipation, conditions resulting in chronic cough and obesity contribute to the development of POP.[2,3] The pathophysiology of POP is attributed to the loss of basal tone of the levator ani and coccygeus muscles of the pelvic floor, resulting in functional and anatomical weakness of the pelvic floor structures. In patients who have had previous vaginal deliveries, increased intra-abdominal pressures exerted by maternal effort and the foetal presentation in childbirth are likely responsible for the associated muscle trauma and denervation of the pelvic floor.[4] However, a recent literature review of POP in pregnancy found 11 out of 60 individual cases of uterine prolapse reporting parity were diagnosed in nulliparous patients.[2]

The aetiology of POP in nulliparous patients is likely due to the physiological changes in pregnancy, including the increase of progesterone and cortisol resulting in the softening and elongation of the cervix and relaxation of supportive ligaments, reducing the integrity of the pelvic floor.[5] The resulting structural herniation can be defined by the International Continence Society (ICS) Pelvic Organ Prolapse Quantification (POP-Q) and staging system, or which the hymen acts as the fixed point of reference6. Table 1, Table 2, and Figure 1 describe the POP-Q and staging system in further detail.

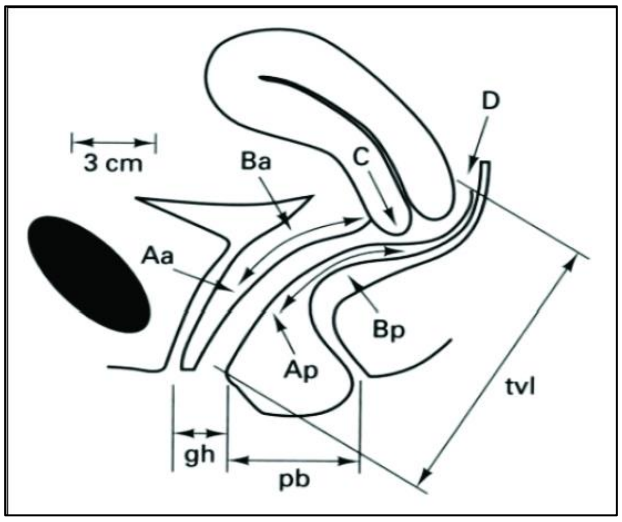

Figure 1: Diagram of the measurement parameters for POP-Q system examination.[6]

Addressing uterine prolapse during pregnancy poses numerous obstacles primarily stemming from the absence of established, evidence-based treatment protocols. Management strategies often rely on extrapolating from approaches used for non-pregnant individuals. Therefore, further research is essential to address the current gap in the literature. Here, we discuss two unique cases of young females presenting with POP in their third trimester of pregnancy without significant predisposing factors.

Table 1: Stages of POP-Q system measurement.[6]

Stages	
Stage 0	No prolapse demonstrated
Stage 1	The most distal portion of the prolapse is more than 1 cm above the level of the hymen
Stage 2	The most distal portion of the prolapse is 1 cm or less proximal or distal to the hymenal plane
Stage 3	The most distal portion of the prolapse protrudes more than 1 cm below the hymen but protrudes no farther than 2 cm less than the total vaginal length
Stage 4	Vaginal is everted

Table 2: Description of measurement parameters for POP-Q system examination.[6]

Hymen	**Plane of the hymen is defined as zero. All measurements are proximal or distal to the hymen and measured in centimetres.**
Point Aa	Point A anterior
Point Ba	Point B anterior
Point C	Cervix
Point D	Posterior fornix (if cervix present)
Point Ap	Point A posterior
Point Bp	Point B posterior
GH	Genital hiatus. It is the length from the urethral opening to the hymen
PB	Perineal body. It is the length from the posterior aspect of the hymen to the mid-anal opening
TVL	Total vaginal length (at rest). It is the length from the hymen to the most distal point

CASE REPORTS

The search strategy encompasses a thorough examination of databases such as PubMed, Embase, Cochrane Library, and Web of Science from the databases inception to December 2023.

The keywords and phrases such as "uterine prolapse in pregnancy," "gestational pelvic organ prolapse," "management of uterine prolapse in pregnant women," and "maternal pelvic floor disorders," were used to capture a wide array of studies relevant to the topic.

Two independent reviewers screening titles and abstracts for relevance and any discrepancies resolved through discussion or third-party consultation. The data extracted

from the articles will be narratively synthesised to provide a holistic overview of the condition.

Case 1

A 28-year-old female, gravida 2 and parity 1, presented at 30 weeks of gestation with complaints of pelvic pressure and a visible bulge in the vaginal area. She did not suffer from any voiding difficulties or incontinence. Her past obstetric history includes one normal vaginal delivery at term. On clinical examination, she was found to have a cystocele. Her management plan included conservative treatment with focused pelvic floor physiotherapy aimed at strengthening the supporting muscles. Additionally, a ring pessary was inserted to provide mechanical support and alleviate the prolapse symptoms. The patient was closely monitored for any signs of discomfort or complications arising from the pessary and was counselled on signs of cervical ulceration or infection. The patient had a spontaneous vaginal delivery at 40+3 weeks.

Case 2

A 32-year-old female, gravida 4 and parity 2, presented at 32 weeks of gestation with complaints of a 'ball-like' protrusion at the introitus, especially noticeable after lifting her eldest child. Her past obstetric history includes two vaginal deliveries. Initial examination revealed a uterine prolapse which was manually reducible. However, the prolapse recurred within a short period post-reduction.

Considering the recurrent nature of the prolapse and the patient's gestational age, a multidisciplinary team was involved to formulate a comprehensive management plan. This plan included regular monitoring, counselling on avoiding activities that raise her intra-abdominal pressure, and discussions on the possible interventions post-delivery. The patient was also educated on potential risks and signs of complications, such as signs of urinary obstruction or infection, which would necessitate urgent medical evaluation. She went on to have an uncomplicated vaginal delivery at 39+1 weeks.

DISCUSSION

Uterine prolapse in pregnancy is a rare yet significant clinical entity posing unique maternal and foetal risks in the antepartum, intrapartum, and post-partum period. This case series presents two noteworthy clinical phenomena of pelvic organ prolapse (POP) in young female patients without significant risk factors. The unusual presentation of POP in this population group highlights the need for further research into treatment modalities specific to pregnant patients, as well as the role of antenatal screening for POP and the importance of a multidisciplinary management approach.

In both cases, the absence of risk factors for POP in pregnancy, such as a pre-pregnancy POP; advancing age; high body mass index; medical conditions resulting in raised intra-abdominal pressure, previous traumatic vaginal deliveries, or significant family history of POP, demonstrates the acute nature of the condition during pregnancy. The physiological changes of pregnancy including increased cortisol and progesterone levels leading to ligamentous and muscular relaxation, as well as the chronically raised intraabdominal pressure of the growing foetus, likely contribute to the onset of POP, usually in the third trimester. In our case series, the most significant risk factor is multiparity. Existing literature reports that POP during pregnancy most commonly occurs in multiparous women, whereby patients with two previous vaginal deliveries are four times more likely to develop prolapse compared to nulliparous women.[7,8]

Despite this, there are no current prenatal or antenatal screening programs identifying pregnant patients at risk of prolapse. In our case series, and indeed reflected in many others, patients only bought their prolapse into conversation once symptomatic. This highlights the need for routine pelvic floor assessments in the prenatal and/or antenatal care to detect the early signs of POP.

Whilst the data on uterine prolapse in pregnancy is outdated and often extrapolated from non-pregnant patients, previous case studies have documented the maternal and foetal risks associated with this condition. There is an increased risk of preterm labour as a result of cervical oedema.[1,3]

A protruding, oedematous cervix may cause ulcerations, infection, recurrent urinary tract infections and urinary retention.[3] This not only leads to physical discomfort, but impacts on psychosocial domains including self-esteem, body image and sexual function. The primary intrapartum challenges associated with uterine prolapse include difficulties achieving sufficient cervical dilation, a heightened risk of cervical tears and obstructed labour. Risks in the postpartum period include haemorrhage and infection resulting from delayed healing of perineal tissue.[3]

Due to the rarity of uterine prolapse during pregnancy, there is no standard evidence-based management plan. Treatment modalities are based on previous case studies and extrapolated from that of non-pregnant patients. The management of choice is conservative, as was reflected in the case series, including bedrest in the Trendelenburg position to relieve pressure off the cervix, involvement of pelvic floor physiotherapists and continuous use of vaginal pessaries until labour, most commonly the Gellhorn type.[9]

Early successful surgical management of uterine prolapse has been documented, although only after careful consideration of the surgical and anaesthetic risks to the foetus.[10] There is no current recommendation for preferred mode of delivery, although appropriate treatment of patients antenatally may result in an uneventful, spontaneous vaginal delivery.[3] However, studies show the adjusted odds of subsequent prolapse development

increased with vaginal parity compared with caesarean delivery (1.82 (95% CI 1.04–3.19) and may serve as a consideration in delivery modality.[11]

CONCLUSION

This review showcases the unusual presentations of two young pregnant women with pelvic organ prolapse during their third trimester, where significant risk factors are absent. Timely identification of pelvic organ prolapse is essential and when coupled with individualised, multidisciplinary management, may lead to an uneventful, spontaneous vaginal delivery.

Our review underscores the need for routine pelvic floor assessments in prenatal and/or antenatal care to detect the early signs of pelvic organ prolapse in all population groups. It advocates for considering the psychosocial implications of this condition in the treatment plan.

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