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Pelvic Organ Prolapse during Pregnancy: A Case Series and Review of Literature

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Abstract

Pelvic organ prolapse during pregnancy is extremely rare. Limited cases (less than 30) have been reported since 1980. From a very benign presentation of heaviness in perineum, it can present as uterine rupture with fetal and maternal mortality. No standard guidelines of care have been established for this rare presentation. There is gross variation in management ranging from conservative measures, laparoscopic surgery to cesarean section followed by peri-partum hysterectomy and abdominal sacral colpopexy. This case series report five cases of pelvic organ prolapse during pregnancy and outlines an approach of watchful expectancy with favorable maternal & fetal outcomes.

Keywords: Pelvic organ prolapsed; Pregnancy; Cervix

Introduction

Pelvic organ prolapse (POP) is a common gynecological complaint in developing countries (mean prevalence 19.7% [range 3.4-56.4%]) [1]. However, POP during pregnancy; is a relatively rare condition with estimated incidence of 1 per 10,000-15,000 deliveries [2]. Furthermore; this incidence is declining with 39 cases reported since 1980 (Table 1) [2-33].

Prolapse of pelvic organs (usually cervix) during pregnancy is different from pregnancy in a woman with pre-existing POP. Whereas POP before pregnancy usually resolves spontaneously by the end of second trimester, the prolapse during pregnancy usually starts developing in second or third trimester and may worsen progressively if unattended [2-34]. We hereby report five cases of POP during pregnancy.

Case 1

A 34-year-old pregnant women, (gravida 3, para 2), presented to outpatient department at 37 weeks of gestation, with the feeling of something descending into her vagina for three weeks. All her previous deliveries were home conducted vaginal deliveries with no difficulty. There was no significant complaint except for abnormal sensation of mass in the perineum since 32 weeks of gestation. On examination there was there was stage 2 POP [pelvic organ prolapse quantification system (POP-Q)] (Figure 1), with no ulceration, edema or desiccation of the cervix. She was hospitalized and advised bed rest in slight Trendelenburg's position. After bed rest alone her cervix was interiorized and descended usually during walking or straining. She had spontaneous labor onset at 37 weeks 5 days of gestation and had normal vaginal delivery. On subsequent follow up 3 months post partum, there was no residual prolapse.

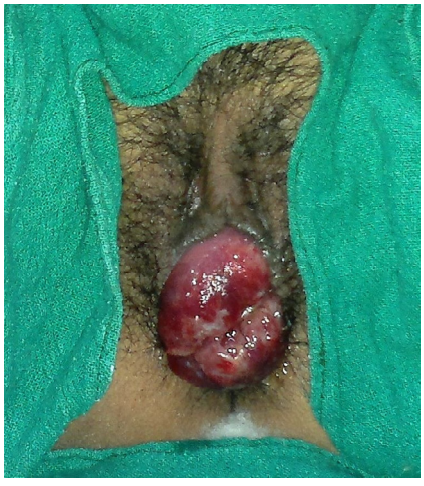

Figure 1: Pregnant women with POP [Q] stage 2.

Case 2

A 26-year-old pregnant women, (gravid 2, para1), presented with complaint of heaviness in perineum at 26 weeks of gestation. Her previous delivery was a normal vaginal delivery. On examination her cervix descended up to stage 2 POP-Q classification as shown in Figure 2. Cervix was healthy. She was advised bed rest in slight Trendelenburg's position. Her subsequent pregnancy was uneventful. She had spontaneous onset of labor at 39 weeks 5 days of gestation & delivered a healthy baby. On subsequent follow up three months later there was no prolapse seen.

Case 3

A 32-year-old pregnant woman, gravid 2, para 1, presented to

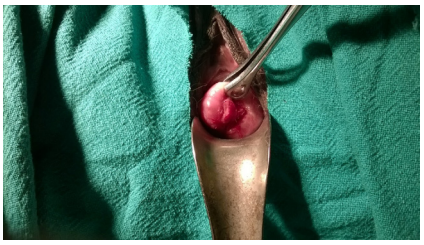

Figure 2: Pregnant women with POP [Q] stage 2.

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emergency department at 28 weeks gestation with complaint of something coming out of introitus for three weeks. Her first delivery was forceps assisted delivery (birth weight 3725 grams.). There was no history of any pelvic organ prolapse (POP) before or after first pregnancy. Her past medical and surgical history was un-remarkable. On examination there was prolapse of cervix 4 cm beyond hymen (POP-Q stage 3), as shown in Figure 3. There was no ulceration, edema or desiccation of the cervix. She was managed conservatively by hospital admission, bed rest in slight Trendelenburg position and an appropriate size vaginal ring pessary. Urine culture and endo-cervical swab cultures were sent periodically, which were found to be normal. Gradually prolapse was reduced with conservative management. She was discharged and was kept on routine follow up with weekly checking and repositioning of vaginal ring pessary. She twice required switching to larger sized ring pessary. Her ante-natal period was un-complicated. She went into spontaneous labor at 39 weeks. Her pessary was removed in late first stage of labor. During second stage of labor the fully dilated prolapsed cervix was gently slipped over fetal head. She had normal vaginal delivery (neonatal birth weight 3375 grams). On follow up three months later POP had corrected spontaneously & she did not require any further intervention.

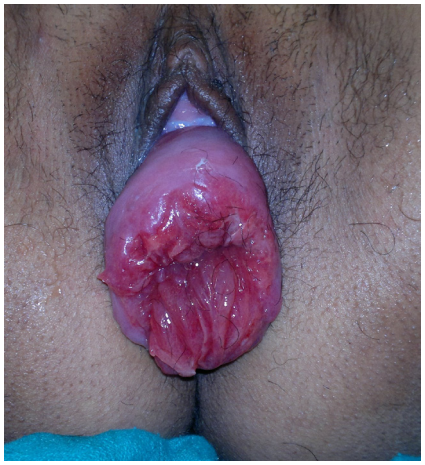

Figure 3: Pregnant women with POP [Q] stage 3.

Case 4

A 28-year-old pregnant women, gravid 5, para 4, presented at 34 weeks of gestation to the outpatient department with prolapse of the cervix. All her previous deliveries were home conducted vaginal deliveries with no history of difficult or prolonged labor. She gave

Study	Year	Cases	POP during pregnancy	POG at presentation (weeks)	Mode of delivery	Indication if Cesarean section
Hill et al. [5]	1984	1	1	-	Vaginal delivery	-
Brown et al. [6]	1997	3	2	26 and 29	Vaginal delivery	-
Matsumoto et al. [7]	1999	1	1	12	Vaginal delivery	-
Horowitz et al. [8]	2002	2	2	10 and 26	CS	Elective CS
Guariglia et al. [9]	2005	1	1	10	Vaginal delivery	-
Meydanli et al. [10]	2006	1	1	35	CS	Elective cesarean hysterectomy
Partsinevelos et al. [11]	2006	1	1	31	CS	Elective CS
Cheng et al. [12]	2006	1	-	-	CS	CS with TAH
Tukur et al. [13]	2007	1	1	Labor	CS	?Obstructed labor
Daskalakis et al. [14]	2007	1	1	12	CS	Elective CS
Lau et al. [15]	2008	1	1	labor	Vaginal delivery	-
Chandru et al. [16]	2007	1	1	39	CS	Elective CS
Toy et al. [I7]	2009	1	1	36	CS	Elective CS
Sit et al. [I8]	2009	1	1	Second trimester	Vaginal delivery	-
Minguez et al. [I9]	2009	1	1	37	Vaginal delivery	-
Eddib et al. [20]	2010	1	-	-	Vaginal delivery	-
Kart [21]	2010	2	2	20 and 16	Vaginal delivery	-
Cingillioglu et al. [22]	2010	1	1	????	CS	Elective
De Vita et al. [23]	2011	2	-	-	CS	Elective CS
Yousaf et al. [24]	2011	1	-	-	Vaginal delivery	-
Pantha [25]	2011	1	-	-	Vaginal delivery	-
Yousaf et al. [26]	2011	1	1	labor	Vaginal delivery	-
Gupta et al. [27]	2012	1	-	-	Vaginal delivery	-
Mohamed-Suphan [28]	2012	1	1			
Miyano et al. [4]	2013	4	2	14 and 20	Vaginal delivery and CS	Cephalo-pelvic disproportion
Ozyer et al. [29]	2013	1	-	-	CS	Gangrenous cervix
Martínez-Varea [30]	2013	1	-	-	Vaginal delivery	-
Pizzoferrato et al. [31]	2013	1	1	13	CS	Emergency CS
Lecointre et al. [32]	2013	1	1	16	CS	Elective CS
Karatayli et al. [33]	2013	1	1		CS	Emergency CS with abdominal hysteropexy

Table 1: Cases of POP with pregnancy reported since 1980.

history of prolapse of cervix in her fourth pregnancy, which was minimal and self-limiting with no ante-partum, intra-partum or post partum complication. There was no POP in the inter pregnancy interval. There was no significant medical or surgical illness in the past. In this pregnancy the prolapse was first noticed at 28 weeks of gestation, it gradually worsened to the present stage over period of 6 weeks. Now it was irreducible and was associated with interference in routine activities like walking and sitting. There were no urinary or bowel complaints. On examination whole of cervix was lying outside introitus (POP-Q stage 4) as shown in Figure 4. There was extensive edema and desiccation of the prolapsed cervix making it irreducible. However, there was no ulceration. She was admitted in the hospital & advised bed rest in slight Trendelenburg's position. Daily dressings were done with magnesium sulphate to reduce the edema & desiccation. Urine culture and endocervical swab cultures were sent. Gradually the edema was reduced and cervix was interiorized. She went into preterm labor at 34 weeks 6 days gestation and had a pre-term vaginal delivery. Post partum period was un-eventful. Even after six months of delivery, patient still had stage 1 (POP-Q) prolapse which is being managed conservatively with Kegel's exercises alone.

Case 5

A 26-year-old pregnant women, gravid 2, para 1, presented few hours post partum to emergency department with retained placenta. Her previous delivery was by cesarean section. There was history of something coming out of introitus in this pregnancy since 30 weeks gestation. She went into spontaneous labor and was referred to this institute for non progress of labor (gestation 33 weeks). On her way to hospital she delivered in the ambulance where a dead fetus was delivered and placenta was retained (two hours post partum). On examination, she was in shock; tachycardia (heart rate 126 beats per minute) and blood pressure 90/50 mm of Hg. She had severe pallor. On visual examination of the perineum whole of the cervix was lying outside introitus (POP-Q stage 4). Cervix was ulcerated and desiccated. There was blackish discoloration of posterior lip of the cervix (Figure 4). External OS was admitting one finger only. There was a 9 centimeters tear in the posterior wall of the cervix up to the vault of the vagina. Umbilical cord was seen protruding through this cervical tear. Immediately emergency investigations were sent and resuscitative measures were started, one unit blood transfusion was started and two units blood were cross matched and she was shifted to operation theatre for manual removal of the placenta. Her hemoglobin was 5 g%. In operation theatre external and internal OS were found non-negotiable; hence decision was taken to deliver the placenta through rent in the posterior wall of the cervix. Procedure was uneventful; she received a total of three units of blood transfusions intra-operatively. Posterior cervical wall tear was repaired (Figure 5). Her post operative period was uneventful. On follow up after 12 weeks post partum still there was stage 2 POP-Q prolapse for which she was advised surgery, however subsequently she was lost to the follow up.

Figure 4: Pregnant women with POP [Q] stage 4.

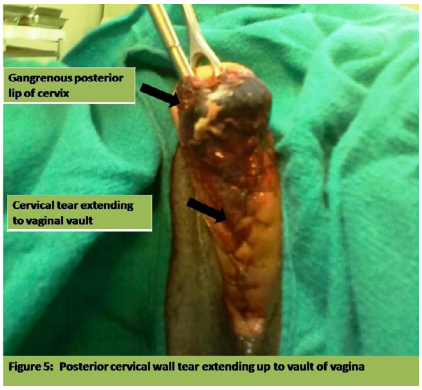

Figure 5: Posterior cervical wall tear extending to vault of vagina with gangrenous posterior lip of the cervix.

Discussion

POP during pregnancy is an extremely rare condition. This condition has been invariably described along with pre-existing POP with pregnancy. There is limited literature available on this distinct identity of POP during pregnancy. Since 1980 to the best of our knowledge, only 39 cases of POP with pregnancy have been reported (Table 2). Out of these 39 cases, 26 (67%) are those with POP during pregnancy & remaining 13 (33%) are those with pre-existing POP.

POP with pregnancy was quiet common in past, with around 250 cases reported, mostly before 1990 [2]. With subsequent decrease in parity and better management of prolonged & difficult labor, incidence of POP associated with pregnancy has fallen substantially [2,3]. However, in recent times cases of *"POP associated with pregnancy"* are actually cases of *"POP during pregnancy"* and this number is unlikely to fall in near future, as pointed out by Miyano N et al. [4].

The exact cause of POP only during pregnancy is not known. Why this condition occurs during pregnancy alone and reverts more or less to normal after delivery is an enigma. Of all factors, multiparity [4] is a predominant risk factor predisposing for the same. Other risk factors involved are prolonged labor, or difficult delivery [23], even cervical elongation and hypertrophy (both of which are normal physiological changes in pregnancy) might predispose to this peculiar complication [14]. Rarely this condition might originate spontaneously even in nulligravidas [23]. Also, hormonal changes in pregnancy i.e. increased levels of cortisol, progesterone and relaxin; could contribute to same. Multiple factors incriminated for POP in general also include age, BMI, congenital weakness in pelvic fascial support, increased intra-abdominal pressure, pelvic tumors, and pelvic trauma, but their association with POP during pregnancy is not known [3,14,21,23]. However, as seen in our case series; previous difficult vaginal delivery, prolonged second stage of labor and previous forceps delivery can predispose to POP during pregnancy [14]. We observed all the cases in multiparous women, with all except one having normal vaginal delivery. One woman had forceps delivery. These observations are consistent with already held view point of "*prolonged labor or difficult delivery*" being associated with POP during pregnancy.

	Case 1	Case 2	Case 3	Case 4	Case 5
Age (in years)	34	26	32	28	26
Parity	2	1	1	4	1
Previous birth history	Both Home conducted vaginal delivery	Home conducted vaginal delivery	Operative Vaginal Delivery (Forceps Delivery)	Previous normal vaginal deliveries	Previous Cesarean section
Gestational age of prolapse	32 weeks	26 weeks	25 weeks	28 weeks	30 weeks
Positive History of prolapse in previous pregnancy	No	No	No	Yes	No
Gestational age of delivery	37 weeks 5 days	39 weeks 5 days	39 weeks	34 weeks 6 days	33 weeks
POP – Q Stage at diagnosis	2	2	3	4	4
Management	Bed Rest alone	Bed Rest alone	Bed Rest and Vaginal Ring Pessary	Bed Rest and Magnesium Sulphate daily dressings	–
Follow up	12 weeks; No residual Prolapse	12 weeks; No residual Prolapse	12 weeks; No residual Prolapse	Six months; POP-Q Stage 1 prolapse	12 weeks; Stage 2 POP-Q prolpase

Table 2: Characteristics of all women with POP during pregnancy.

Most common symptom in this condition is feeling of heaviness in perineum or something coming out of introitus, (usually in second trimester) in an otherwise uncomplicated pregnancy. However, if this condition is neglected it may gradually progress to edema, dessication, ulceration & infection of cervix further leading to pre-term labor, cervical dystocia and ultimately rupture uterus with fetal death & severe maternal morbidity & mortality [3-7].

Intra-partum complications include cervical dystocia, cervical laceration, obstructed labor and if further neglected uterine rupture, fetal death and severe maternal morbidity & even mortality [3-14].

Mainstay of ante-natal management is; *"internalization of exteriorized cervix"*, thereby reducing chances of cervical edema, dessication, and ulceration. This can be achieved by judicious use of bed rest and a vaginal pessary. A simple ring pessary may be life saving for a pregnant woman with POP. However, this pessary needs to be changed frequently if it is not retained by woman. Pessary should be removed only in early labor. If already cervix is thick & irreducible, magnesium sulphate can act as an excellent hygroscopic agent & its repeated use may help in internalizing cervix. Good genital hygiene & local antiseptics may also be used for the same. Failure of conservative management necessitates hospitalization, laparoscopic modified Gilliam suspension might be of some benefit in selected cases (however many authors have reported failure of this procedure) [7].

Induction of labor in these women is controversial [3]. Due to extreme rarity of occurrence; no literature is available on induction of labor in these women. However, it should be avoided as long as possible due to theoretical risks of increased expulsive efforts worsening the condition & predisposing to uterine rupture [3]. Moreover, on the contrary pre-term labor is actual problem in this condition, which can be safely managed with tocolysis [3,4]. Fundal pressure should be contra-indicated, as it has found to be associated with POP during pregnancy in one case report [13].

Most authors have advocated elective cesarean section for these women [10,11,14]. However, our observations have shown that spontaneous labor under watchful expectancy is an excellent option, with CS reserved for prolonged labor or cervical dystocia. Even extensively edematous & stage 4 POP-Q prolapse have responded excellently to this approach (case 4). Meydanli et al. [10] have advocated peri-partum hysterectomy with suspension of vaginal cuff with periosteum of sacral promontory but in our opinion such a radical approach is un-necessary in majority of women. As we have observed majority of these women respond to conservative management even in post partum period.

One of the major limitations of our case series is non-availability of long term follow up of these women. Out of five cases being reported here, all except one are still on follow up with us and only one of them have residual POP (that too only stage 1 POP-Q), which is being managed conservatively. None of them have reported pregnancy subsequently.

Conclusion

POP during pregnancy is a very rare complication of pregnancy. From being innocuous presentation of heaviness in perineum; it may present as uterine rupture, fetal & even maternal death. Majority of women only need close follow up and conservative measures (bed rest & appropriate size pessary). Spontaneous labor and normal vaginal delivery can be safely offered, with CS restricted for obstetrical indications (cervical dystocia & prolonged labor). Obstetricians should be aware of this rare entity & its potential complications. However, optimal current management guidelines are unclear and women should be managed on individualization of cases.

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