

Perianal Complications in Puerperium and Associated Risk Factors

Sriranjani Iyer*, Sarojini P. Jadhav, Anita Kandi, Suraj Soyam

Department of General Surgery, Government Medical College, Aurangabad, Maharashtra, India

ABSTRACT

Introduction: Puerperium is defined as the period of about six weeks after childbirth during which the mother's reproductive organs return to their original non-pregnant condition. Perianal problems, including constipation, hemorrhoids and fissure, are among the most common digestive complications among women in puerperium, observed in about 30 percent to 50 percent of women. Considering this great prevalence and the paucity of similar research in this aspect in an Indian population, this study was done to assess the prevalence of perianal problems seen in puerperium and the risk factors associated with it.

Methods: This was a prospective observational cohort study done over the span of 2.5 years on 902 puerperal ladies. A self-structured questionnaire covered detailed history and per-rectal and proctoscopy examination was done. Patients were followed up telephonically for regression of perianal problems post management.

Results: The total prevalence of all the perianal problems in puerperium encountered in this study, out of 902 subjects, was 36.3% (327 subjects). The perianal problems encountered were Fissure in 185 patients (20.5%) followed by haemorrhoids in 110 patients (12.2%), perianal episiotomy infections in 25 patients (2.8%) and perineal tears in 7 patients (0.8%). On comparative analysis, positive family history, macrosomia, past history of perianal diseases, second stage of labour >50 minutes showed a higher prevalence in perianal disease group as compared to the healthy group. Out of these, positive family history of perianal diseases ($p=0.015$), past history of perianal diseases ($p=0.016$) were statistically significant. The % of multipara with hemorrhoids was more as compared to primipara ($p=0.01$), patients who had a past history of any perianal disease have higher chance of hemorrhoids during puerperium ($p=0.00$). Patient with constipation in pregnancy have higher chance of hemorrhoids in pregnancy ($p=0.00$). Patients who had a past history of any perianal disease, had higher chance of fissure during puerperium ($p=0.00$). 27.74% of study subjects with macrosomic babies had fissure in their puerperal period which on comparison with patients with non macrosomic babies was only 19.22% and this was statistically significant ($p=0.02$).

Conclusion: Constipation, haemorrhoids, anal fissures are the most common perianal problems in postpartum period causing significant reduction in life quality of those afflicted with them.

Keywords: Puerperium; Constipation; Haemorrhoids; Anal fissures; Perianal episiotomy

INTRODUCTION

Puerperium is an extremely important period of time for a woman. Extensive physiological, biochemical and dietary changes occur during pregnancy and puerperium. The body secretes a large amount of progesterone which causes decreased muscle tone and lower motility of the gastrointestinal tract.

About 1/3rd of women after childbirth complain of perianal symptoms [1]. Patients in puerperium show a significant increase in incidence of peri-anal symptoms compared to the normal population. Perianal problems, including constipation, hemorrhoids and fissure, are among the most common digestive complications among women in puerperium. Due to the recurring physical and psychological problems they cause for the

Correspondence to: Sriranjani Iyer, Department of General Surgery, Government Medical College, Aurangabad, Maharashtra, India, Tel: 7498809105; E-mail: sriranjani1993@gmail.com

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patient, these disorders can cause a significant reduction in the life quality of those afflicted with them [2].

Considering the results of the previous studies, great prevalence of perianal problems during puerperium and the paucity of similar research of this kind conducted in India, we set out with an aim to assess the various perianal problems seen in women during their puerperal period, their prevalence and the risk factors which cause it [3].

MATERIALS AND METHODS

This is a prospective observational cohort study conducted over a span of 2.5 years in which 902 puerperal ladies who have delivered in our institute and were admitted in our PNC ward were enrolled. Informed consent form and patient information sheet regarding the study were provided to every patient. Institutional ethical committee approval was obtained before the start of the study. Patients who developed perianal complaints anytime during their puerperium were considered as a positive

case [4]. A detailed history using a self-structured questionnaire and a thorough clinical examination, per-rectal examination and proctoscopic examination was done in all the patients enrolled. Patients were followed up telephonically about regression of the problems post management. All the data was filled in microsoft excel spreadsheet; student t test was used to find the significance of study parameters on continuous scale between two groups on metric parameters. *Chi-square*/Fisher exact test were used to find the significance of study parameters on categorical scale between two or more groups. Data was analysed using SPSS software trial version 22 [5].

RESULTS

This study included a total of 902 study subjects who belong to puerperal period. Highest number of patients presented with constipation (24.2%) as their main symptom followed by bleeding per rectum (11.6%) as seen in Table 1 [6].

Table 1: Distribution of perianal symptoms.

Sr. No	Symptoms	Frequency (n)	Percentage (%)
1	Constipation	218	24.2
2	Bleeding per rectum	105	11.6
3	Pain in peri-anal region	30	3.3
4	Peri-anal itching	12	1.3
5	Peri-anal discomfort	51	5.7
6	Painful protrusion at the anus	21	2.3
7	Peri-anal burning	23	2.5
8	Mucus discharge	14	1.6
9	None	428	47.5

The total prevalence of all the perianal problems in puerperium was 327(36.3%). According to Table 2, the perianal problems encountered were fissure (20.5%) followed by hemorrhoids

(12.2%). Other perianal problems encountered were perianal episiotomy infections and perineal tears [7].

Table 2: Prevalence of perianal problems in puerperium in the study population.

Sr. No	Perianal problem	Frequency (n)	Percentage (%)
1	Hemorrhoids	110	12.2
2	Fissure	185	20.5
3	Peri-anal episiotomy infections	25	2.8
4	Perineal tear	7	0.8
5	None	575	63.7
Total	Prevalance of perianal problems in puerperium	327	36.30%

On comparative analysis of suspected risk factors of perianal diseases in puerperium, it was seen that positive family history, macrosomia, past history of perianal diseases, second stage of labour >50 minutes showed a higher prevalence in perianal disease group as compared to the healthy group of which

positive family history of perianal diseases ($p=0.015$) and past history of perianal diseases ($p=0.016$) were the risk factors that were statistically significant, as seen in Table 3 [8].

Table 3: Risk factors for peri-anal diseases of puerperium.

Sr. No	Risk factor	Peri-anal diseases group, n (%)	Healthy group, n (%)	Odds ratio (95% CI)	P value
1	Age>30 years	25 (46.3%)	29 (53.7%)	0.768	0.347
2	Positive family history	60 (64.5%)	33 (35.5%)	1.735	0.015
3	Macrosomia	72 (52.6%)	65 (47.4%)	1	1
4	Vaginal delivery	357 (51.3%)	339 (48.7%)	1.282	0.128
5	Caesarean section	74 (61.2%)	47 (38.8%)	1.282	0.128
6	Past history of peri-anal diseases	147 (59.0%)	102 (41.0%)	1.437	0.016
7	Second stage of labour >50 mins	176 (56.1%)	138 (43.9%)	1.241	0.124

Constipation

Highest prevalence of constipation among current delivery type was seen in those with forceps delivery followed by those with vacuum delivery [9]. But this was not statistically significant. There was no statistical significant correlation between occurrence of constipation and age, parity, past history of perianal disease, family history of perianal disease, prolongation of second stage of labour, neonatal macrosomia and consumption of iron tablets [10].

Hemorrhoids

As seen in Table 4, a statistical significant relationship was observed between prevalence of hemorrhoid and parity ($p=0.01$) and past history of any anorectal disorders ($p=0.00$) [11]. Patient

with constipation in pregnancy have higher chance of hemorrhoids in pregnancy. This was statistically significant ($p=0.01$) [12].

The highest level of hemorrhoid in puerperium was reported among people with previous vacuum delivery (37.5%) and with current vacuum delivery (22.22%) [13]. There was no significant statistical relationship between prevalence of hemorrhoid and type of previous and current mode of delivery and, family history of any anorectal disorders, prolonged length of second stage of labour, macrosomic babies on presence of hemorrhoids in puerperium according to this study [14] (Table 4).

Table 4: Relationship between significant risk factors and hemorrhoids in puerperium.

Sr. No	Parity	Hemorrhoids		P value
		Positive	Negative	
1	Primipara	37 (9.11%)	369 (90.89%)	0.01
2	Multipara	73 (14.72%)	423 (85.28%)	
Sr. No	Past history	Hemorrhoids		P value
		Positive	Negative	
1	Present	52 (20.88%)	197 (79.12%)	0.01
2	Absent	58 (8.88%)	595 (91.12%)	
Sr. No	History of constipation in pregnancy	Hemorrhoids		P value
		Positive	Negative	
1	Present	16 (7.33%)	202 (92.66%)	0.01
2	Absent	94 (13.74%)	590 (86.25%)	
Total		110	792	

Fissure

There was a statistical significant relationship found between presence of fissure and past history of any perianal disease ($p=0.00$), length of second phase of labour ($p=0.00$), macrosomic babies ($p=0.02$), as studied in Table 5 [15]. The highest level of fissure in puerperium was reported among people with previous forceps delivery and among people with

current vaginal delivery. No significant statistical relationship was observed between parity, type of previous childbirth, type of current childbirth and family history of perianal disease on presence of fissures in puerperium [16].

Table 5: Relationship between significant risk factors with presence of fissure.

Sr. No	Past history of perianal disease	Fissure		P value
		Positive	Negative	
1	Present	79 (31.73%)	170 (68.27%)	0
2	Absent	106 (16.23%)	547 (83.77%)	
Sr. No	Length of 2 nd stage of labour	Fissure		P value
		Positive	Negative	
1	<50 min	95 (16.16%)	493 (83.84%)	0
2	>50 mins	90 (28.66%)	224 (71.34%)	
Sr. No	Neonatal weight	Fissure		P value
		Positive	Negative	
1	Macrosomia	38 (27.74%)	99 (72.26%)	0.02
2	Non-macrosomia	147 (19.22%)	618 (80.78%)	
Total		185	717	

DISCUSSION

Constipation

Prevalence of constipation in puerperium: In this study, 218 patients (24.2%) presented with constipation as their main symptom [17]. This was very similar to the study done by Bradley, Catherine S. MD, MSCE et al. in which the incidence of was 24% in 3 months postpartum. Another study conducted by Derbyshire et al., showed that the prevalence of both straining and incomplete evacuation were high in all trimesters [18]. This could be attributed to higher fiber intake in Indian population compared to the western world. There were studies which showed high prevalence of constipation in pregnancy and puerperium ranging from 45% to 55% like the Indian society of gastroenterology task force. This can be attributed to the lower fiber consumption in western countries. On the other hand, lower prevalence ranging between 4.5%-13% were shown in a few studies done [19].

Hemorrhoids

Prevalence of hemorrhoids in puerperium: In this study, the prevalence of hemorrhoids in puerperal subjects is 12.2%. Most

of the studies done all over the world have documented the prevalence of hemorrhoids in puerperium as ranging between 12.2% to 40%. Higher prevalence of hemorrhoids in puerperium is seen as compared to other gestational period and as compared to the general population. This was reinforced most of these studies were an overestimate, because many studies had an anal examination done during pregnancy, but half of the patients reported proctologic disease in the past, and many were lost to follow up. Around 90% of thrombosed external hemorrhoids during puerperium were observed during the first day after delivery was studied. Few studies have reported a lower prevalence of hemorrhoids in puerperium ranging between 5.3%- 9.3% as seen. In both these studies low prevalence could be attributed to the way information was obtained, by use of a postal questionnaire within 6 weeks postpartum. Contrary to all other studies, identified the highest prevalence of hemorrhoids in puerperium to be around 92.7% of all the other perianal diseases seen in puerperium. This was because, postal questionnaires or telephone interviews, were used and various symptoms like the perianal pain and bleeding were attributed to haemorrhoids without a clinical examination [20].

Significant risk factors of hemorrhoids in puerperium

Relationship between parity and hemorrhoids in puerperium: With increasing parity, there is an increase in the prevalence of haemorrhoids. This was also studied Ghasemzade, et al. and Gojnic, et al. Patients with parity above two, have a greater chance of haemorrhoids in puerperium. This was attributed to the repeated change in the environment and emotional stress on repeated pregnancies causing a constipation and further haemorrhoids in subsequent pregnancies. A study done by Beksac, et al., talks about presence of pregnancy related vascular growth factors, which increased in every pregnancy, which could be one of the cause for the haemorrhoids in puerperium. Surprisingly, in a few studies, parity has no effect in the prevalence of haemorrhoids in puerperal ladies as seen by MacArthur, et al. and Unadkat, et al. the reasoning for which was not given, although it is seen in these studies that as parity increases, the risk of new symptoms decreases [21].

Relationship between past history of perianal diseases and hemorrhoids in puerperium: A history of past perianal problems were considered to have higher prevalence of haemorrhoids in pregnancy and puerperium, which was also seen in studies done by Ghasemzade, et al.; Medich, et al.; Unadkat; et al. This could be attributed to the increase in haemorrhoidal symptoms as pregnancy progresses since circulating blood volume reportedly increases by 25%-40%. This leads to increased vascular engorgement and dilatation, with venous stasis increased by the enlarging gravid uterus or increased pelvic floor laxity.

Relationship between the constipation and hemorrhoids in puerperium: Prevalence of hemorrhoids in patients with history of constipation was more as compared with those who did not have constipation. This was reinforced by a study done by Shi et al. The study done by Poskus et al. identified terminal constipation (Dyschezia) as the single independent preventable risk factor for haemorrhoids in pregnancy and puerperium, with highly significant odds ratio in logistic regression analysis. This reason for these as deciphered on reviewing literature were many, including straining during defaecation, impairment of defaecation habits during pregnancy, decrease in physical activity, compression of the lower bowel by the uterus and psycho-social stress may also lead to constipation and hence haemorrhoids. Increase in intra-abdominal pressure leading to vascular engorgement can also be attributed to the presence of constipation in pregnancy [22].

Fissure

Prevalence of fissure in puerperium: The prevalence of fissures is 20.5% (185 patients) according to this study. The prevalence of anal fissure, according to literature, in puerperium ranged from 9% to 15.2%. Very few people have studied fissure in puerperium including Abramowitz et al.; Martin et al. and Corby et al. Rest of the studies have studied various anorectal disorders as a whole or have focussed on symptomatic constipation. Higher frequency by Abramowitz et al., could be attributed to longer period of followup. The high prevalence rate seen in our

study compared to other studies could be owing to the higher level of constipation which posed as an independent risk factor itself, and the ignorance to the treatment advised to the uneducated population in the rural city.

Significant risk factors of fissure in puerperium

Relationship between past history of perianal disease with presence of fissure in puerperium: Patients with past history of any perianal problems had higher chance of fissure during puerperium. This was consistent with the study done by Ghasemzade et al. This is probably due to the vicious cycle of pain, sphincter contraction, fissure intensification, in patients with past history of fissures with added hormonal and mechanical factors of pregnancy.

Relationship between length of second stage of labour with presence of fissure in puerperium: Patients having a prolonged length of second stage of labour (>50 minutes) have higher chance of fissure in puerperium as seen in the present study. Few studies, including Ghasemzade et al. and Abramowitz et al. identified prolonged length of second stage of labour to be significant independent prognostic factor for fissure in pregnancy. The reason for this link is unclear. Some studies mention that prolonged straining can cause causing increased venous stasis. These delayed changes in the perineum and the increased duration of hormonal change may predispose females to fissure.

Relationship between the weight of baby with presence of fissure in puerperium: Heavier babies (>3700 grams) were associated with anal fissure in puerperium as studied by Ghasemzade et al., and Abramowitz et al., similar to the results seen in the present study. This can be attributed to decreased blood flow in anal mucosa due to heavier baby in pregnancy, causing higher chances of fissure in puerperium. Along with this heavier babies can cause increased perineal tears causing higher chances of fissure [23].

CONCLUSION

Perianal problems in pregnancy and puerperium cause physical and psychological problems in mothers resulting in a significant reduction in the quality of the life of those afflicted. The elimination of these risk factors may lead to a higher quality of life during pregnancy and puerperium. Positive family history and past history of perianal diseases were the independently associated risk factors of perianal disease of puerperium. Individually, multiparous and patients with past history of perianal diseases have higher prevalence of Hemorrhoids in puerperium. Whereas, patients with past history of any perianal disease, prolonged length of second phase of labour, macrosomic babies and iron tablets consumption during pregnancy pose as a risk factor for fissures in puerperium.

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