

# Post-partum management of severe pubic diastasis

N.B. Mulchandani, J.J. Jauregui, R. Abraham, E. Seger, E. Illical

Department of Orthopaedic Surgery and Rehabilitation Medicine, SUNY Downstate Medical Center, Brooklyn, NY (USA)

## Summary

**Introduction:** Pubic symphysis diastasis during pregnancy is a rare complication which can present as pain with ambulation, urinary dysfunction, and pelvic instability. A consensus treatment does not currently exist between surgical and conservative management. The authors present a case of severe pubic diastasis which was successfully treated using a conservative pelvic binder. **Case Report:** A 31-year-old female presented with severe lower back pain following the uneventful delivery of her fourth child. On radiograph, a pubic symphysis diastasis of 5.5 cm was noted and she was subsequently fitted with a pelvic binder on post-partum day 3. She experienced a full range of motion and was pain free at six-week follow-up, with a diastasis of 2.1 cm present. At one year and three-month follow-up, the patient presented with a diastasis of 2.4 cm and continued to have full range of motion and mobility. **Conclusion:** This case contributes to the literature in showing that conservative treatment of pubic diastasis could be considered in cases where separation has exceeded normal physiologic limits.

**Key words:** Post-partum management; Pubic symphysis diastasis; Conservative treatment.

## Introduction

Pubic diastasis is a well-accepted phenomenon of pregnancy. Hormonal and physiologic influences often allow a two-fold increase from the normal radiographic separation of four to five mm. An upper limit of physiological separation has been defined as ten mm, with further separation often producing symptoms including pain with ambulation, urinary dysfunction, and pelvic instability [1, 2]. This pathologic separation is rare, with a reported incidence ranging from one in 300 to one in 30,000 [3, 4]. Currently, the gold standard treatment for pathologic pubic diastasis is not defined; however both operative and non-operative alternatives have been reported, with operative intervention generally indicated in severe cases (suggested as a separation of greater than four cm) [5]. The authors present a case of severe pubic diastasis which was successfully treated non-operatively.

## Case Report

A 31-year-old female patient of South Asian descent (gravida 5, para 4) presented to the present emergency department at 41+1 weeks of gestation and underwent an uneventful vaginal delivery of a healthy male child weighing 4,100 gm. In terms of her delivery details (Table 1), Stage I period of 10.9 hours, Stage II period of ten minutes, and Stage III period of five minutes were recorded. Towards the end of her pregnancy, her height and weight were 1.62 meters and 92 kg. Additionally, her glycosylated hemoglobin and her oral glucose tolerance test were found to be within normal limits. The patient denied history of drug, tobacco, or alcohol use, taking only pre-natal vitamins throughout the pregnancy. Of her prior pregnancies, three were carried to term, and she also had one

ectopic pregnancy which required dilation and curettage during the first trimester (See Table 1). There is no other known medical or surgical history.

On post-partum day (PPD) 1, the patient complained of severe low back and buttock pain which worsened with ambulation. On physical examination (PE), the patient had significant pain on anterior and lateral compression of the pelvis, which limited our examination for stability. Increased tenderness to palpitation (TTP) at bilateral sacroiliac joints were noted. She had 3/5 strength on active range of motion (AROM) of bilateral (B/L) hips and knees with increased pain. She had 5/5 strength on ankle plantar and dorsiflexion, and 5/5 strength on great toe extension. Her sensation was intact throughout all distributions in her bilateral lower extremities with 2+ dorsalis pedis and posterior tibial pulses. An antero-posterior (AP) pelvis radiograph was performed and a 5.5-cm diastasis of the pubic symphysis was noted along with widening of the sacroiliac joints (Figure 1A).

On PPD 2, she remained bedbound, with slightly decreased pain. Treatment options were presented, including but not limited to close observation with physical therapy and protected weight-bearing with binder placement, external fixation, or open reduction internal fixation. The patient opted for non-operative treatment using a pelvic binder. Treatment was initiated on PPD3 through instruction of proper use of the binder and gait training utilizing a rolling walker. Repeat AP radiographs were taken on PPD 3 while using the binder, showing a minimal decrease in diastasis to 4.9 cm. (Figure 1B). On PPD 5 assessment, the patient was able to ambulate approximately 70-80 feet with rolling walker support, and climb four-step stairs with the use of a handrail and a single axillary crutch. She still experienced pain with hip flexion greater than 20 degrees, and demonstrated 3/5 strength in the right hip and 4/5 strength in the left hip on flexion. The patient was cleared for discharge with home physical therapy instructions, as well as strict pelvic binder use instructions and non-steroidal anti-inflammatory drugs. She was discharged from the hospital on PPD 7.

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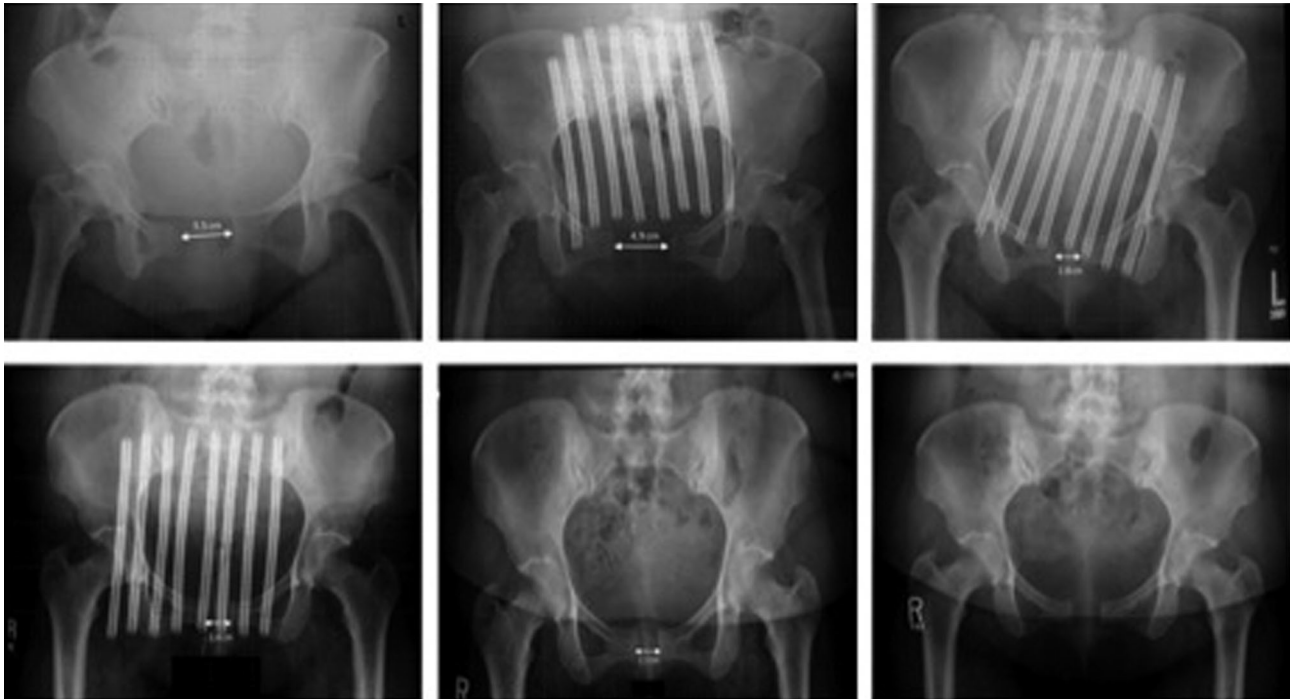


Figure 1 – AP radiographs. A) PPD 1, diastasis 5.5 cm; B) PPD 3, diastasis 4.9 cm with binder; C) PPD 15, diastasis 2.8 cm with binder; D) Four weeks, 2.4 cm with binder; E) Three weeks, 2.1 cm without binder; F) 15 months, 2.4 cm without binder.

Fifteen days following her delivery, the patient reported continued use of the pelvic binder to minimize pain. On PE, she had moderately improved strength, but continued to have pain on active hip flexion greater than 25 degrees. Her pelvis was stable to anterior and lateral compression. An AP radiograph taken at this time demonstrated a dramatic decrease in the pubic diastasis to 2.8 cm. (Figure 1C) At four weeks PP, she had no pain with protected weight bearing using the rolling walker and was able to maintain a steady gait pattern. At this point, she was advanced to weight bearing activities with the pelvic binder. AP Radiographs were taken, showing a decrease in the symphyseal separation by an additional four mm (Figure 1D).

At six weeks PP, the patient was maintaining a non-antalgic gait pattern without the use of a rolling walker. The patient was instructed to wean herself from the pelvic binder and that it should be used only for lifting and other strenuous activities. The patient demonstrated full active range of motion without pain and 5/5 strength bilaterally. Her radiographs at this point showed a pubic symphyseal separation of 2.1 cm without the pelvic binder in place (Figure 1E at three months). At one year and three-month follow up, the patient reported continued full range of motion without pain and no difficulty with ambulation or stairs. An AP radiograph was obtained and showed a pubic symphyseal separation of 2.4 cm (Figure 1F).

## Discussion

Pubic diastasis is a rare complication of pregnancy, with one study reporting an incidence of approximately one out of 569 deliveries [6]. Associated factors for pubic diastasis include multiparity, cephalo-pelvic disproportion, and trau-

Table 1. — *Prior pregnancy history.*

Pregnancy #	Patient's age at delivery (years)	Delivery method	Complications	Child's birth weight
1	21	NSVD	None	8 lbs 0 oz
2	24	NSVD	None	6 lbs 13 oz
3	25	NSVD	GDMA1	7 lbs 6 oz
4	27	N/A	ETOP D&C	N/A

NSVD: normal spontaneous vaginal delivery;

GDMA1: gestational diabetes mellitus Type A1;

ETOP D&C: ectopic pregnancy requiring dilation and curettage.

matic delivery [7]. Occasionally this diastasis can present with an audible “pop” and immediate sharp pain during delivery. However, this phenomenon was not noted in the current case [6]. Symptoms of pubic diastasis are related to the severity of the separation, and include pain with ambulation, urinary dysfunction, and pelvic instability [1, 2].

Both surgical and conservative options exist for pubic diastasis treatment. Most case reports have used conservative pelvic binders in less severe diastasis. Pedrazzini *et al.*, reported successful treatment of a symptomatic 3.1 cm diastasis using the pelvic binder and bed rest [8]. Likewise, reports have shown conservative treatment in cases of pelvic diastasis of 2.4 cm and four cm [9, 10]. Surgical intervention may be indicated in cases where the pubic diastasis exceeds

Table 2. — Previous pubic diastasis case reports.

Author, year	Diastasis	Treatment
Herren <i>et al.</i> , 2015 [16]	1.1 cm	Pelvic binder
Herren <i>et al.</i> , 2015 [16]	1.5 cm	Pelvic binder
Fidan <i>et al.</i> , 2013 [17]	5 cm	Pelvic wrapping
Cicek <i>et al.</i> , 2015 [10]	4 cm	Pelvic binder
Cowling and Rangan, 2010 [14]	5.4 cm	Pelvic binder
Joosseph and Kwek, 2007 [9]	4 cm	Pelvic binder
Kowalk <i>et al.</i> , 1996 [18]	4.7 cm	Pelvic binder
Pedrazzini <i>et al.</i> , 2005 [8]	3.1 cm	Pelvic binder
Dunivan <i>et al.</i> , 2009 [11]	6.2 cm	External fixation
Seth <i>et al.</i> , 2003 [12]	8 cm	External fixation
Elchanan <i>et al.</i> , 1995 [4]	5 cm	Internal fixation

four cm during pregnancy in order to preserve the integrity of the pubic symphyseal joint [5]. Successful operative treatment using external fixation has been performed in cases of pubic diastasis of 6.2 cm and 7–8 cm respectively [11, 12]. In addition, surgery may be necessary in cases of pelvic instability or when pubic symphysis rupture complications occur [13]. Previously case reports presenting successful operative and conservative treatment of pubic diastasis are presented in Table 2.

There is limited research documenting successful conservative treatment of pubic diastasis greater than four cm. Of these, Cowling *et al.* reported a case of pubic diastasis following pregnancy of 5.4 cm which was successfully treated using a pelvic binder over a period of six months [14]. Conservative treatment has also been successful in cases where separation is as high as 9.5 cm [15]. The presented case is another example of successful conservative treatment of a pregnancy induced severe diastasis. In this case, the patient was discharged one week post-partum and was pain free at six weeks, with an associated decrease in pubic symphysis width of 2.1 cm.

## Conclusion

The authors report a case of severe pubic diastasis following pregnancy which was successfully treated using a conservative approach consisting of a pelvic binder and physical therapy. This report contributes to the literature in showing that cases involving symphyseal widening of greater than four cm may remain candidates for conservative treatment.

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Corresponding Author:  
J. ILLICAL, M.D.  
SUNY Downstate Medical Center  
Department of Orthopaedics  
450 Clarkson Avenue, MSC 30  
Brooklyn, NY 11203 (USA)  
e-mail: emmanuel.illical@downstate.edu