

# **AUTOMOBILE TRAUMA WITH ISOLATED BLADDER LESION: CASE REPORT OF A PATIENT WITH PRUNE-BELLY SYNDROME**

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**Abstract:** **Introduction:** Prune-Belly Syndrome (SPB) is a rare congenital disease of indefinite etiology, more prevalent in males, which has a report reported between 2 and 4 cases per 100,000 live births. Abdominal wall muscle defect, serious urinary tract abnormalities and bilateral cryptorchidia constitute the classic clinical triad of the disease. This article aimed to elucidate a rare case of isolated bladder lesion in contused trauma, associated with the defect of the abdominal muscles present in individuals with the syndrome. **Case Description:** This is a case of a 35-year-old male patient with SPB, admitted to an emergency service due to boring abdominal trauma by severe cinematic accident without a seat belt. The patient had abdominal pain at palpation, stable pelvis, and evolved with macroscopic hematuria in the urine collecting bag, confirmed by bladder rupture through retrograde cystography. Exploiting laparotomy, with identification of intraperitoneal injury in the body and bottom of the bladder, was chosen, which was corrected by rubbing of edges and cystography in two planes. Even after hospital discharge, the bladder probe for delay was maintained until the outpatient return consultation. **Discussion:** Vesical lesions are often associated with predisposing factors, such as bladder or fracture of pelvic bones. **Conclusion:** differing from the other cases described in the literature, the present report illustrates the occurrence of isolated bladder lesion in contused trauma associated with the abdominal wall muscle defect present in individuals with SPB.

**Keywords:** Prune-Belly Syndrome; contused abdominal trauma; bladder injury.

## INTRODUCTION

Prune-Belly Syndrome (SPB) is a rare congenital disorder of indefinite etiology, composed of a classical clinical triad:

abdominal muscles deficiency, which characterizes the wrinkled aspect of the abdominal wall, renal abnormalities and bass urinary tract, and cryptorchidism bilateral (Eagle, 1950). The reported incidence is 2 and 4 cases per 100,000 live births, being more prevalent in males, although there are rare cases in females (RETH, 2010).

In addition to the characteristic triad, the syndrome may have multisystem changes, including cardiopulmonary, gastrointestinal and musculoskeletal anomalies concomitant to varying degrees. The severity of renal dysplasia and abnormalities of the urinary tract, and the presence of pulmonary hypoplasia are the main characteristics that determine survival and prognosis among patients (Geary, 1986). These abnormalities may result in recurring episodes of urinary tract infections (ITU), urinosepse, varying degrees of renal and respiratory failure and other manifestations of the disease (SEIDEL, 2015).

Among the various theories proposed to clarify the etiopathogenesis of the syndrome, obstructive theory and the theory of mesodermal defect are the most cited. Obstructive theory attributes the origin of the syndrome to infravesical obstruction, which would cause vesicoureteral reflux (RVU) and dilation of the upper urinary tract, preventing the descent of the testicles and making the formation of the abdominal wall difficult. The theory of the mesodermal defect argues that the origin of the syndrome is linked to a disturbance in the establishment of mesoderm during the third week of pregnancy; Embryonic leaflet responsible for the formation of urinary tract, kidneys and abdominal muscles (WHATLEY, 1996).

Anatomically, the genitourinary system is divided into upper and lower tracts, and specific mechanisms lead to injuries in different parts of the system (MOREY,

2004). Vesical lesions, whether perforating or bruised, are rare; However, when they occur, they are often associated with predisposing factors such as pelvic bone replement or fracture (MOREY, 2001). The immediate identification of the lesion depends on a systematic assessment regarding the mechanism of the lesion, relevant findings of physical examination, urine analysis and appropriate image diagnosis.

This article aimed to elucidate a rare case of isolated bladder lesion in contused trauma of a patient admitted to a Porto Alegre emergency unit associated with the abdominal muscles defect present in individuals with the syndrome.

### CASE DESCRIPTION

This is a case report of a 35-year-old male patient who was admitted to the Standard Immobilization Emergency Service due to boring abdominal trauma by severe cinematics crash without the use of a seat belt.

The evaluation of trauma xabcde was observed neurological, respiratory and hemodynamic stable patterns, without evidence of exsanguinant bleeding. At physical examination, the abdomen was depressed and painful, with no signs of peritonism, and the pelvis was stable, without evidence of fractures.

Patient with Prune-Belly syndrome, with a prior history of four abdominal surgeries in childhood due to right renal atrophy, repetition Itu and absence of congenital lateral abdominal abdominal wall muscles. Among the surgeries performed, there was a history of ureteral reimplantation and cystostomy.

Urgently, computed tomography was performed, which evidenced the wall bulging in the right thoraco-abdominal transition, with abdominal wall dehiscence, and expansion of the pyelocalicial cavities and left ureter, with diffuse bladder walls suggestive

pseudodiverticle. In addition, it displayed a large amount of free liquid in the abdominal cavity, with blood compatible density (Figure 1).

Due to macroscopic hematuria visualized in the urine collecting bag, and suspected bladder injury, retrograde cystography was requested, which evidenced extravasation of intravesical contrast through the defect in the back wall of the upper portion of the bladder, compatible with clinical suspicion of bladder rupture.



Figure 1: Computed tomography of abdomen with intravenous contrast. Source: Prepared by the author (2022).

Exploiting laparotomy, with 3 liters of serohematic liquid free in the abdominal cavity, as well as extensive intraperitoneal injury to the body and bladder background, grade IV, approximately 10 cm (Figure 2). No lesions were not identified in massive and hollow viscera. Encouragement of edges and cystraphy was performed on two planes, abundant washing of the cavity, and subsequent closure of aponeurosis.

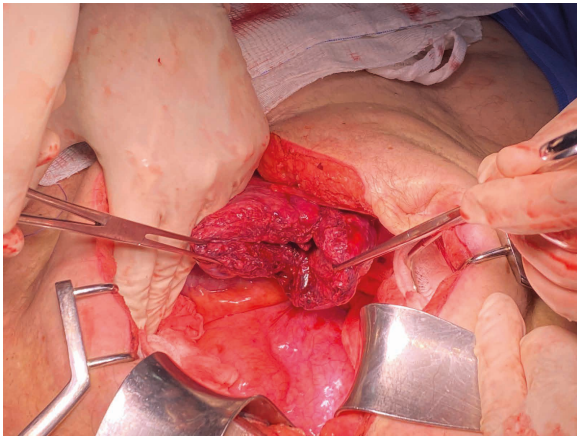


Figure 2: Intraperitoneal injury to the body and bottom of the bladder. Source: Prepared by the author (2022).

The patient evolved satisfactorily, presenting clear diuresis through the bladder probe of delay and good healing of the operative wound. He was discharged with 6 days postoperatively, oriented in relation to the alarm signs, and carrying the bladder probe, which was maintained until the outpatient return consultation.

## DISCUSSION

Worldwide, traumatic lesions are the sixth leading cause of death and the fifth leading cause of moderate to severe disability. The lesion of the genitourinary tract is usually uncommon, with an estimated incidence of <1% (Paprel, 2006). The most prevalent etiology is by contused trauma (65%), and younger men are predominantly affected (average age of approximately 30 years).

Bladder injuries, being a body protected by the bone structure of the pelvis, occur in about 1.6% of cases. They are usually associated with predisposing factors, such as bladder or fracture of pelvic bones, and are intraperitoneal in about 30% of cases. (GOMEZ, 2004)

Macroscopic hematuria, suprapubic sensitivity and/or difficulty to urinate are the main signs associated with bladder injury

(MOREY, 2014). Hemodynamically stable patients, victims of contused abdominal trauma, which have macroscopic hematuria must be investigated with computed tomography to detect the presence of urinary tract lesions. However, retrograde cystography is the gold standard because it has greater sensitivity for the diagnosis of vesic lesions, with accuracy ranging from 85 to 100% (Quagliano, 2006).

The cases already reports of intraperitoneal rupture after abdominal trauma occurred in patients who already had some fragility of the bladder wall, chronic ethists or urinary retention. In addition, the striking rupture as a result of a seat belt injury is typically intraperitoneal. Intraperitoneal traumatic vesic lesions justify surgical repair, as these lesions are generally large and do not heal spontaneously, and most are repaired by exploiting laparotomy. During intraperitoneal repair, the rest of the bladder, ureters and bladder cervix must also be examined for concomitant lesions (MORTELMANS, 2014).

Patients with SPB have abnormalities in the urinary tract and abdominal muscles deficiency, factors that can make the bladder function difficult, with increased post-military residual urinary volume (Fernández-Bautista, 2021). In addition, they may require multiple therapeutic and surgical interventions to minimize risk and improve quality of life.

As described in the case report in question, the patient underwent four previous surgeries, including cistostomy and ureteral reimplantation, factors that favor a certain fragility of the bladder wall (Mortelmans, 2014), as well as not wearing a seat belt at the moment not was at the moment of the collision. In addition, due to the absence of congenital lateral abdominal muscles, possibly the contused trauma showed greater potential to develop an isolated bladder rupture.

## CONCLUSION

Patients victims of contused, hemodynamically stable abdominal trauma and with macroscopic hematuria must be investigated to detect urinary tract lesions, with retrograde cystography being the gold standard for diagnosis. Deferring from the other cases described in the literature, the present report illustrates the occurrence of isolated bladder lesion in contused trauma associated with the abdominal wall muscles defect present in individuals with SPB.

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