

## Post-traumatic strangulated Spiegel's hernia: A Clinical case and review of the literature

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### Introduction

Post-traumatic hernia (HPT) of the abdominal wall is a rare entity, defined by the protrusion of an organ, or pre-peritoneal fat through an acquired defect of the musculoaponeurotic wall following a trauma, without the notion of pre-existing hernia. [1] The first case was described by Shelby in 1906 and since then around 250 cases have been published [2]. The preferential location of HPTs in the abdominal wall

is in areas of weakness [3], the spiegel line of which remains an exceptional location and is rarely reported in the literature. [4] This is how we propose to take stock of this entity in order to emphasize its rarity and diagnostic difficulties since it is often overlooked in emergency situations.

### Observation

We report the case of a 27-year-old patient with no pathological history who consulted in the emergency room following a stabbing attack. He was stabbed in his abdomen as a result of a fight. On initial examination, he was hemodynamically stable. Abdominal examination found only a 2 cm linear wound on the left flank with unshredded edges without evisceration or from the digestive fluid. The abdomen was supple without any palpable swelling. Biology showed hyperleukocytosis at 17100. Thoraco-abdominal computed tomography did not show traumatic intra-abdominal lesions apart from a diastasis between the rectus abdominis and the muscles of the left

anterolateral wall of the abdomen without intraabdominal effusion. (Figure 1) It was decided to hospitalize and monitor the patient in a surgical setting. Faced with the installation of an abdominal defense at the level of the left half-abdomen, it was decided to operate on the patient via the midline. On exploration, the abdominal wound was non-penetrating, the small intestine was dilated upstream of a loop incarcerated at the level of a left spiegel hernia, which was released with good vitality. (Figure 2) The hernial orifice was closed with Vicryl 1.0 stitches. The post-operative consequences were simple. The exit was authorized after 3 days.

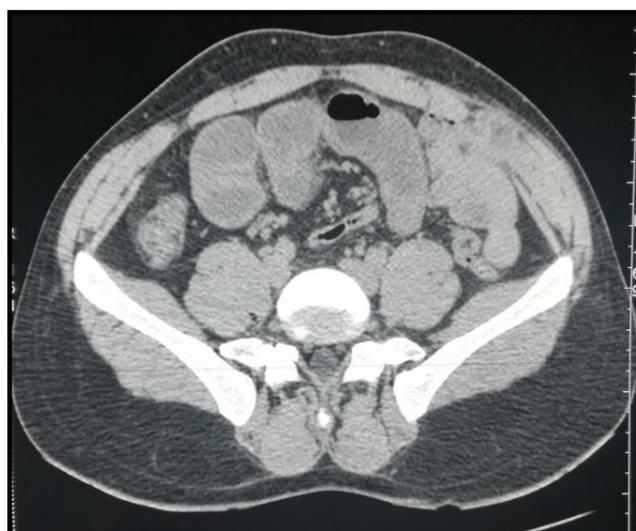


Figure 1: Abdominal CT scan showing a defect of the anterior abdominal wall (arrow)

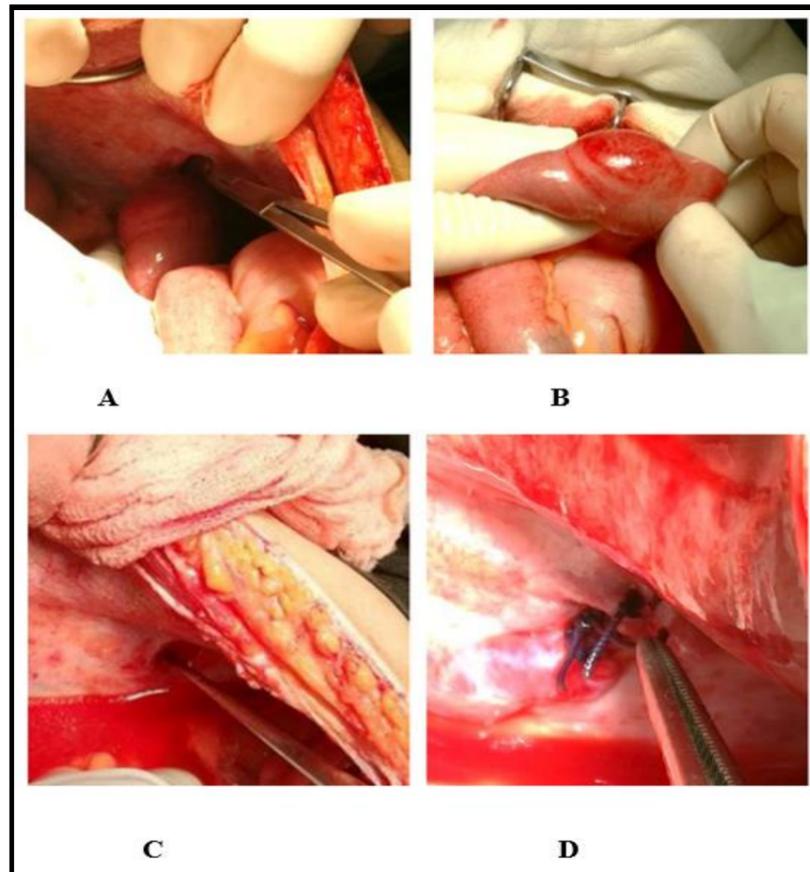


Figure 2: Vue per opératoire A-B: anse incarcerée, C-D: orifice herniaire au niveau de la Ligne de Spiegel

### Discussion

The first case of post-traumatic Spiegel hernia dates back to the year 1933 described by Brandtner [5] and since a few cases have been reported [Table 1]. HPT remains a rare clinical entity with a prevalence of 1 % in all patients. Patients presenting with abdominal trauma [6] It occurred in direct shock after abdominal trauma causing a sudden increase in intra-abdominal pressure. This shock must be spread over a large enough area, without having the force necessary to be penetrating, but still capable of breaking deeper tissues, muscles, and fascia. The hernia is not seen in the site of trauma but in anatomical points of weakness such as the Spiegel line [1,7]. This HPT most often occurs after a low energy mechanism (collision between two motorcycles, contusion by bicycle handlebars ...) more rarely during 'high-energy trauma (AVP with deceleration, fall from a high height) which will be associated with a large wall defect and greater intra-abdominal lesions [8].

This post-traumatic parietal lesion may be unrecognized especially when it is small and especially in an emergency context [9]. In a series

published by Netto et al. [6] comprising 34 cases of PTH of which 30% are not palpable on clinical examination, 50 % are associated with intra-abdominal lesions requiring urgent laparotomy, for the other patients having non-operative treatment two developed a subsequent hernial constriction with an urgent repair. The rate of hernial strangulation for HPT is 8 to 25 % depending on the series [6] which may appear secondarily as in our case, hence the interest of computed tomography which remains essential for the diagnosis of hernia and looking for an associated intra-abdominal lesion. Surgical treatment is urgent in case of associated lesions or hernial strangulation. If the treatment is deferred, the median or elective approach, by laparotomy or laparoscopy, repair with a suture or a plate are still discussed. However, until now, the authors recommend urgent exploration of any HPT by a midline with suturing of the defect by a nonabsorbable thread [10] but with a rate of recurrence after a herniorrhaphy not yet specified requiring the use of series with longer follow-up. [6]

Table 1: Characteristics of patients with post-traumatic Spiegel hernia

	year	âge	mechanism	Clinical examination	Scanner	incision	Exploration+ gestures
Brandtner [5]	1933	34	AVP	TP	-	médiane	Suture simple
Candy[11]	1956	14	Chute de sa motocyclette	TP	-	médiane	HS :suture simple
Hurlbut[12]	1967	8	Chute d'un arbre	TP	-	-	-

<b>Herbert[13]</b>	1973	7	Chute de sa bicyclette	TP	-	Elective	HS :suture simple
<b>IUCHTMAN [14]</b>	1997	7	Chute de sa bicyclette	TP	-	Elective	HS :suture simple
<b>Che-Min Wu [8]</b>	2006	63	AVP	TP	HS	Médiane	HSE + nécrose intestinale : Résection+suture
<b>Lopez [15]</b>	2010	14	Chute de sa bicyclette	TP	HS	-	-
<b>Thakur[4]</b>	2013	9	Chute de sa bicyclette	TP	HS	Elective	HS : suture simple
<b>Aravinda[16]</b>	2014	38	Chute d'un arbre	TP	HS	Médiane	HSE :nécrose intestinale : Résection+stomie
<b>Brian Shea [17]</b>	2017	16	Chute de sa bicyclette	Pas de TP	HS	Elective	HS : suture simple
<b>Notre cas</b>	2017	23	agression	Pas de TP	HS+EP	Médiane	HSE : suture

## Conclusion

The diagnosis of post-traumatic spigel hernia is difficult. The clinic may be lacking, hence the interest of an abdominal scanner that helps in the diagnosis. The immediate or deferred surgical management

depends on whether or not the hernia is strangled and the associated abdominal lesions.

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