Hernia of the posterior lamina of the rectus abdominis muscle sheath: report of a case

Ann. Ital. Chir., LXXIII, 3, 2002

S. Gangi, T. Sparacino, M. Furci, F. Basile

Università degli Studi di Catania
Dipartimento di Chirurgia - Sezione di Chirurgia Generale ed Oncologica
Direttore: Prof. Francesco Basile

Abstract

A case of hernia of the posterior lamina of the rectus abdominis muscle sheath in a 30 years old female, six months pregnant, is reported.
The symptomatology was almost exclusively characterized by a persistent abdominal pain, located in the right costal margin at the intersection with the right adsternal line and aggravated by changes in position and by increases of intra-abdominal pressure. No bulge or specific hernial defect was clinically appreciable.
The key to diagnosis, in this case, was an echography of soft tissues performed in the area where the pain was greater: with the patient in orthostatic position, it was possible to demonstrate a defect in the posterior sheath of the rectus abdominis muscle, that, increasing the intra-abdominal pressure, let pass preperitoneal fat between sheath and muscle.
Both the predisposing (anatomic and clinical) factors and the provocateurs ones, probably involved in the genesis of this peculiar case, are discussed.
Key words: Interparietal hernia, abdominal wall.

Introduction

In this article is described a peculiar clinical picture which we have diagnosed as a hernia of the posterior lamina of the rectus abdominis muscle sheath.
Careful literature search failed to reveal any previous reports of this pathology.
Anamnestic, clinical and ultrasonographic features of this case are presented, while waiting for its evolution in order to indentify the most suitable therapeutical strathegy.

Report of a case

Our patient is a 30-year-old female, six months pregnant, with both familial and personal history negative for previous pathologies (such as diabetes mellitus, hypertension, obesity, etc.).
About two weeks before our initial evaluation, she felt a sudden sharp abdominal pain, while passing from the clinostatic position to the orthostatic one; according to what the patient refers, this pain was exactly located in the right costal margin at the intersection with the right adsternal line, it had no relation with meals and it was not associated to fever, emesis or alvus' alterations.
This pain spontaneously ceased in about two hours, after the patient had reassumed the supine position, but afterwards it frequently appeared, until it became persi-

Riassunto

ERNIA DELLA LAMINA POSTERIORE DELLA GUAINA DEL MUSCOLO RETTO DELL'ADDOME: A PROPOSITO DI UN CASO

Viene descritto un caso di ernia della guaina posteriore del muscolo retto dell'addome, occorso in una donna di 30 anni al sesto mese di gravidanza.
La sintomatologia è stata caratterizzata pressoché esclusivamente da un dolore continuo localizzato in corrispondenza del margine dell'arcata costale destra, all'intersezione di questa con la linea parasternale omolaterale; tale dolore si accentuava durante i cambiamenti di posizione della paziente e con l'aumento della pressione endoaddominale.
All'esame clinico non erano evidenziabili né tumefazioni all'ispezione, né difetti parietali alla palpazione.
Una ecografia della parete addominale ha consentito di porre la corretta diagnosi, evidenziando, con la paziente in posizione ortostatica, un difetto nella guaina posteriore del

Pervenuto in Redazione il 25 Gennaio 2002

muscolo retto di destra, nel quale, aumentando la pressione endoaddominale, si impegnava tessuto adiposo preperitoneale, posizionandosi tra guaina e muscolo.
Vengono discussi i fattori predisponenti (anatomici e clinici) e quelli determinanti probabilmente coinvolti nella etiopatogenesi di tale caso clinico.
Parole chiave: Ernia interparietale, parete addominale.

stent, aggravated by changes in position or by straining and relieved by cessation of the physical activity that precipitated it.
At the physical examination the abdomen was extended because of pregnancy and tractable to both superficial and deep palpation all over abdominal quadrants; spontaneous light pain was exactly located by the patient into an area included between xyfoyd process and right costal arch.
There was no appraisable bulges with the exception of a normal dimension uterus for its gestation stadium; no specific hernial defect was perceptible.
Neither hepatomegaly nor splenomegaly was present; cystic point was negative; Giordano maneuver and Mc Burney's point was negative.
When the patient underwent hepatic echography and laboratory assays aimed to testing her hepatobiliary functionality, no pathological result was obtained, despite her everyday increasing symptomatology.
An echography of soft tissues (with 7.5 MHz sonde) performed in the area where the pain was greater did not demonstrate, with the patient in supine position, pathological elements (Fig. 1), but when the patient was standing it was possible to demonstrate a clear 12 mm gap in the posterior sheath of the rectus abdominis muscle, that, increasing the intra-abdominal pressure, let pass preperitoneal fat between sheath and muscle (Fig. 2). Furthermore, the passage from the clinostatic position to the orthostatic one caused the same pain that the patient previously felt.

Discussion

Despite extensive review of the literature, we are unable to document any previous report of a similar clinical picture.
Nevertheless, it can be possible to consider minor resistentia loci along the posterior sheath of the rectus abdominis muscle the sites where intercostal blood vessels and nerves pass through it (1).
In the case we're discussing, the hernia probably develops into the site where the internal thoracic vessels pass through the posterior sheath of the rectus abdominis muscle, becaming superior epigastric vessels.
Therefore this peculiar clinical picture could be defined as interparietal hernia, since it does not penetrate all layers of the abdominal wall (2, 3).
The ethiology oh this rare hernia should be attributed to a sudden increase of intra-abdominal pressure, operating on a previously extended abdominal wall, in which are dilated the orifices where neurovascular structures pass.
Therefore we can identify as predisposing factors of these pathologies all those conditions, such as pregnancy, obesity or massive ascites, producing a marked distension of the abdominal wall; it can be also thougth, when abovementioned predisposing factors fail, the simple increase of intra-abdominal pressure will not be able to produce the

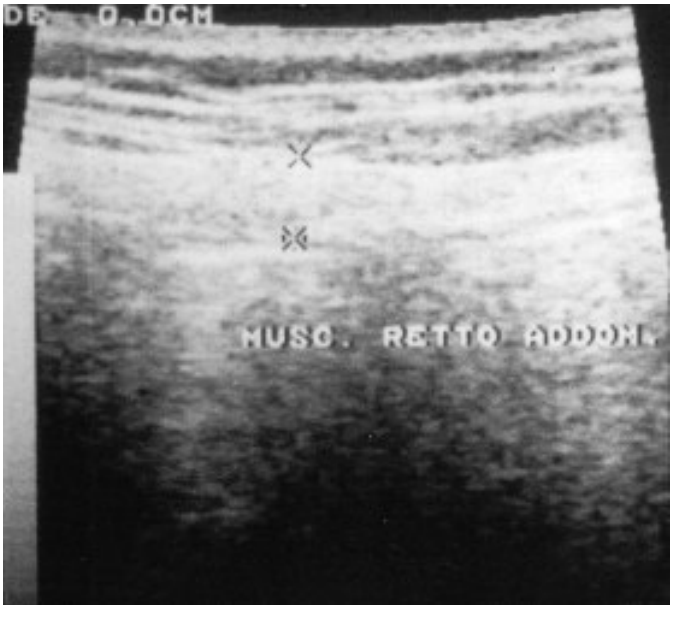

Fig. 1: Ultrasound image of the abdominal wall, from the patient in supine position (parasagittal section): right rectus abdominis muscle shows no pathological elements.

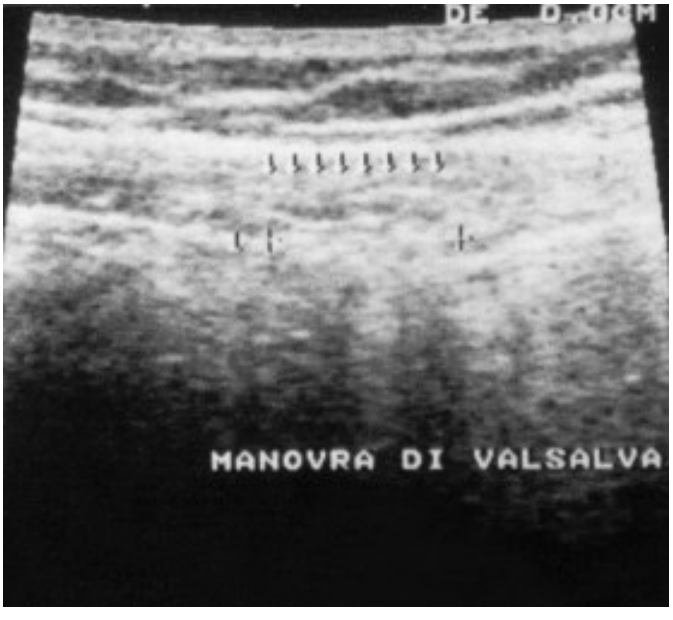

Fig. 2: Sonogram obtained during straining: it is possible to demonstrate a gap in the posterior sheath of the rectus abdominis muscle.

same hernia; nevertheless, if it does not occur, a surgical approach may be necessary.
As we haven't found any previous report of this pathology, as pregnancy is among predisposing factor the most transitory and the patient is still pregnant, we have not undertaken any surgical treatment.
For the present we just emphasize the importance of ultrasonography in the diagnosis of this rare hernia, as well as in the diagnosis of unexplained abdominal wall pain.

Autore corrispondente:

Dott. Santi GANGI
Via Canfora, 16
95128 CATANIA
Tel.: 095/553495

References

1) Askar O.: *Surgical anatomy of the aponeurotic expansions of the anterior abdominal wall.* Ann R Coll Surg Engl, 59:313, 1977.

2) Altman B.: *Interparietal Hernia.* In: Nyhus L.M., Condon R.E.: *Hernia.* Fourth Edition, pagg. 393-399, Philadelphia, JB Lippincott, 1995.

3) Etawo U.S., Elechi E.N.: *Interparietal hernias: analysis of six cases with literature rewiew.* Br J Clin Pract, 41:1068, 1987.