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Pure Pectus Carinatum (Not Associated with Pectus Excavatum) Solved by MIRPC (Minimally Invasive Repair of Pectus Carinatum) Associated with Bilateral Mamarian Hypoplasia Solved by Bilateral Breast Implants

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Rezumat

Pectus carinatum pur (neasociat cu pectus excavatum) rezolvat prin MIRPC (minimally invasive repair of pectus carinatum) asociat cu hipoplazie mamară rezolvată prin implanturi mamare bilaterale

Prezentăm cazul unei tinere de 24 de ani, cu un pectus carinatum important dar simetric, neasociat cu pectus excavatum, fără simptomatologie cardiorespiratorie dar cu probleme psihosociale importante pentru pacientă, rezolvat prin tehnica minim invazivă descrisă de Abramson (procedeul Nuss inversat - MIRPC (Minimally Invasive Repair of Pectus Carinatum). Malformația sternală a fost asociată cu hipoplazie mamară bilaterală, rezolvată prin implant mamar bilateral 10 luni mai târziu. Evoluția a fost favorabilă iar rezultatul estetic satisfăcător pentru pacientă.

Cuvinte cheie: pectus carinatum, minim invaziv, toracoscopie, implant mamar

Abstract

We present the case of a young 24-year-old woman with an important but symmetrical pectus carinatum, not associated with pectus excavatum, without cardiorespiratory symptoms but with significant psychosocial implications for the patient, solved by the minimally invasive technique described by Abramson (reversed Nuss procedure) - MIRPC (Minimally invasive Repair of Pectus carinatum). The sternal malformation was associated with bilateral mammary hypoplasia, solved by bilateral breast implants 10 months later. The evolution was favorable and the aesthetic result was satisfactory for the patient.

Key words: pectus carinatum, minimally invasive, thoracoscopy, breast implant

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Introduction

Pectus carinatum is a malformation of the chest wall which consists in the anterior protrusion of the sternum, occurring less frequently (15% of all chest wall deformities) than the opposite malformation, the pectus excavatum (1).

Unlike patients with pectus excavatum, those with pectus carinatum are most commonly referred to the thoracic surgeon for aesthetic and not functional reasons, usually the surgical indication regarding the association of pectus carinatum and pectus excavatum.

Due to psychological implications for the patient (2,3), the cases of pure pectus carinatum (not associated with pectus excavatum) can benefit from a minimally invasive surgical repair.

Case report

We present the case of a 24-year-old woman with an important but symmetrical pectus carinatum (Fig.1), not associated with pectus excavatum, without cardiorespiratory symptoms but with significant psychosocial problems for this high level of education patient.

She presented some marfanoid features (including a previous history of bilateral subluxation of the crystalline operated during childhood but no signs of aneurysm/ dilation of the aorta. The sternal malformation was associated with bilateral mammary hypoplasia, resulting in further highlight of the anterior thoracic defect and amplification of the psychosocial stress.

The pectus deformity was solved by the minimally invasive technique described by Abramson (reversed Nuss procedure - MIRPC (Minimally invasive Repair of Pectus carinatum).

To repair the malformation a titanium bar was used, inserted under thoracoscopic control, placed presternally, crossing the two pleural cavities, and bilaterally fixed with two stabilizers (Fig. 2). Pleural drainage was considered necessary only on the left side, and suppressed on the first postoperative day.

The primary result after this first operation was satisfactory for the patient (Fig. 3), but she decided to improve the aesthetic aspect with a second intervention (plastic surgery.
addressing the mammary hypoplasia which was corrected 10 months later by bilateral submuscular breast implant without technical difficulties regarding the previous metal implant.

The evolution was favorable and the final aesthetic result was very satisfactory for the patient after the two staged procedures (Fig. 4). The metallic implant will be left in place for a period of 2 to 4 years.



Figure 1. *CT scan and plan of the operation*

Discussions

The classic repair of the pectus carinatum deformity was set by Ravitch in an open procedure described in 1960, consisting in removing the protruding cartilages, performing a sternotomy, pushing downward the sternum and suturing the pectoralis muscles over it (4). Modifications of this classic approach were used later trying to minimise the incision but keeping the same surgical principles (5).

After the success and the spreading of the Nuss procedure for the correction of Pectus Excavatum (6), Abramson performed the first Minimally Invasive Repair of Pectus

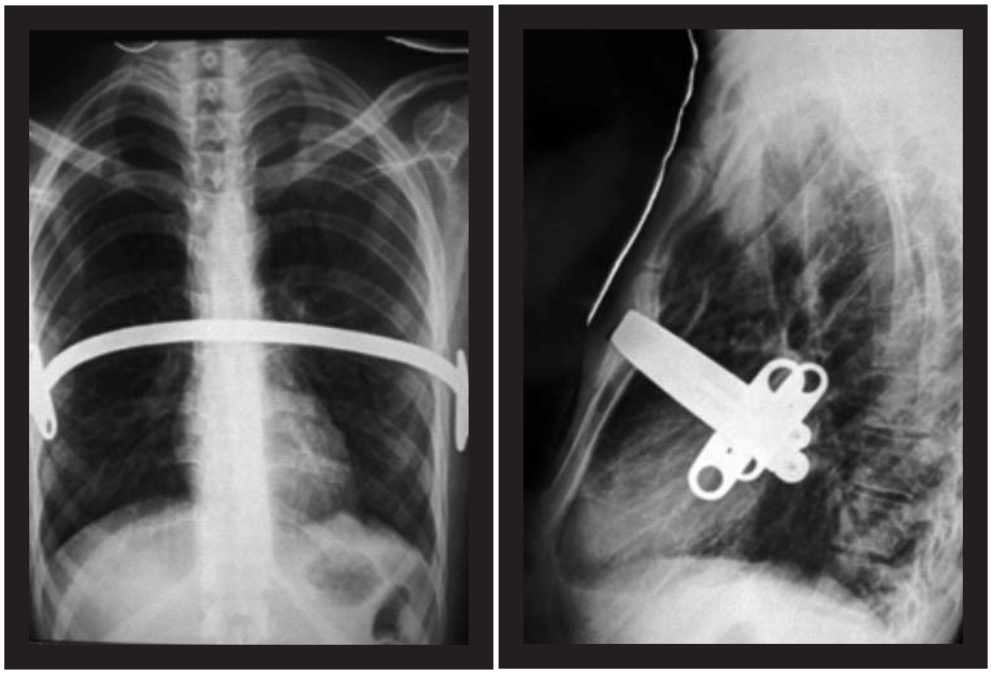


Figure 2. *Postoperative chest X- ray*

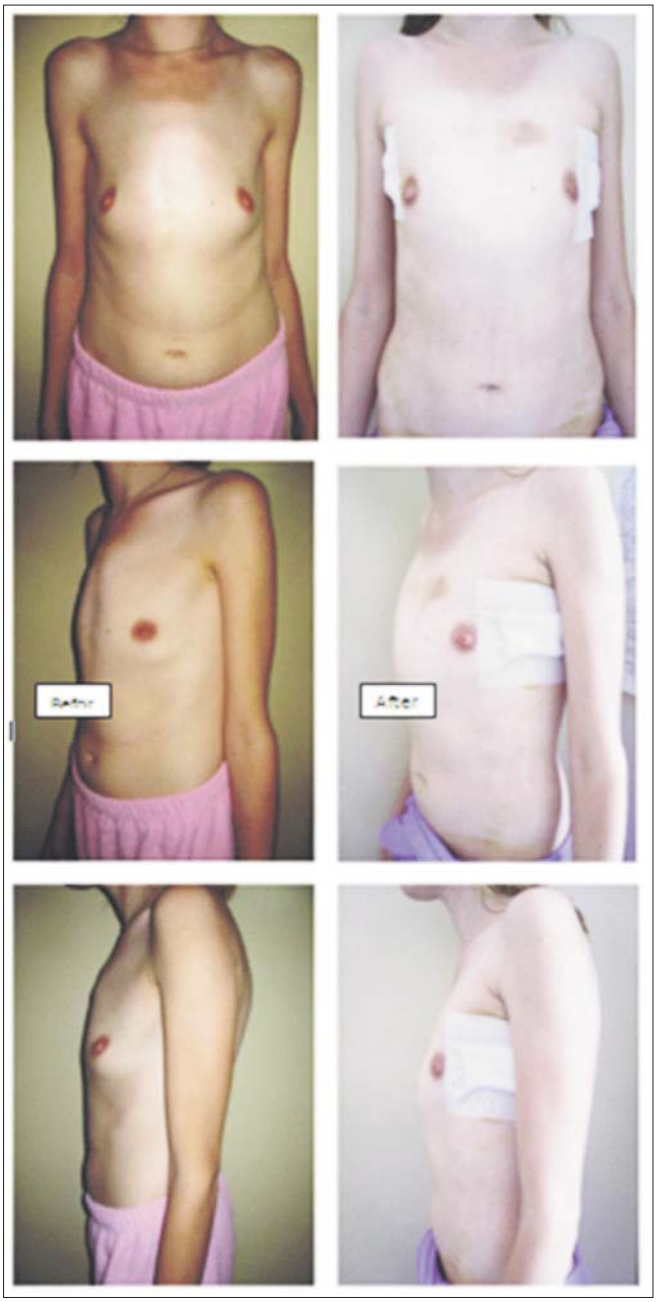


Figure 3. *Postoperative and postoperative (MIRCP) images*

Carinatum (the so-called „reverse Nuss procedure") using the same type of metallic bar placed above the sternum (7,8).

The Nuss procedure has become more and more frequently used in Romania in dedicated thoracic surgery centers (9,10), but to our knowledge this is the first case operated by MIRPC in our country.

We emphasize that the indication for this two stage surgical repair (thoracic surgery and plastic surgery. Was purely cosmetic and not functional criteria, but relying on serious psychosocial implications for our patient.



Figure 4. *Before and after breast augmentation procedure*

Conclusions

Although pectus carinatum surgical indications are more limited than those for pectus excavatum, and based more on aesthetic than functional considerations, in severe malformations with important psychosocial issues minimally invasive interventions such as MIRPC (Minimally Invasive Repair of Pectus carinatum. may represent a solution.

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