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Therapeutic abdominoplasty: Report of a case

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ABSTRACT

BACKGROUND: Abdominoplasty is a surgical procedure which is commonly used for cosmetic purposes. However, there are very few reports in the world literature describing the abdominoplasty procedure for therapeutic purposes rather than for cosmetic reasons.
METHODS: A 58 year old female presented with an excessive drooping belly and a concomitant minor umbilical stoma hernia, who suffered from chronic back pain, urinary incontinence, nerve atrophy of the low extremes, central-type obesity, gastric disorders, and spinal osteophytes who underwent abdominoplasty and umbilical hernia repair.
RESULT: On discharge from the hospital after 11 days, the patient mentioned satisfactory elimination of the back pain as well as amelioration of the urinary incontinence. Within 14 months after the operation, the patient noticed extreme improvement of ambulation and postural stability as well as complete disappearance of the neuro-myodystrophy.
CONCLUSION: Wide abdominal rectus plication abdominoplasty should be considered to be performed for therapeutic purposes when major health problems occur.

1. Introduction

Sudden weight-loss, extensive abdominal protrusion pregnancy and previous surgical operations can lead to formation of drooping belly. The accumulation of body fat in the abdomen without allocation in other parts of the body such as the extremes, results in abnormal allocation of the center of the body weight. Such a fact leads to surcharge of the spine; thus, back pain [1].

Treatment strategies for the management of low back pain and gastric disorders are numerous and lie on a wide spectrum, ranging from conservative to quite invasive techniques. In cases where all types of conservative treatment had no result in treating the patient, surgery may need to take place in the elimination of the symptoms. It is of great importance to be performed the best suitable operation for each case in order a positive result to be achieved [1,2].

However, in this report is presented a case of a female patient who suffered from massive disorders majorly due to an excessive of a drooping belly and underwent abdominoplasty resulting in extreme improvement of her health and quality of life.

2. Case-presentation

A 58 year old female presented in the hospital complaining about excessive chronic back pain, urinary incontinence, gastric disorders, hormonal disorders, and hemorrhoidopathy. During the clinical examination, it was observed a massive drooping belly, neuro-myodystrophy majorly affecting sartorius and quadriceps muscles with obvious atrophy of the low extremes and lack of proper ambulation. A concomitant minor insignificant umbilical stoma hernia was formed due to the massive produced abdominal fat rather than defect of the abdominal wall around umbilicus. As far as the medical history is concerned, the patient suffers from type II diabetes and hypothyroidism under medication. Due to diabetes, the patient followed a fat free diet during which there was a loss of 25 kg within one year while the patient had undergone no previous surgical operations. This situation resulted in the formation of an excessive drooping belly. Since that time, the patient suffered from intense low back pain which prevented the patient from any exercise even from the ordinary ambulant routine and inability to climbing stairs and to perform her daily activities. The patient also suffered from gastric disorders with abdominal distension and discomfort as well as gastroesophageal reflux. Due to extensive deterioration of the symptoms in the last 8 months and the reduction of the quality of life of the patient, decides to undergo abdominoplasty.

3. Pre-operative assessment

The patient underwent computed tomography (CT) of the abdomen and the spinal cord, which revealed a minor herniation from the anatomical umbilicus stoma, a cyst in the left kidney as well as osteophytes of the L5-S1 vertebra. Due to gastric disorders,

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Fig. 1. The patient (frontal view) before and after surgery.

the patient underwent gastroscopy which revealed second grade esophagitis. The patient also underwent colonoscopy which was not completed due to pain and discomfort and revealed a severe hemorrhoidopathy. Ultrasound of the upper abdomen showed fatty liver.

Before the operation, the patient weighted 98 kg and her height was 1.60 m (body mass index: 37.89), (Figs. 1 and 2). The diameter of the abdomen was measured 126 cm, and the diameter of the right and left arm was 27 cm. The diameter of the thighs was also measured, and it was 44 cm in right thigh and 47 cm in the left thigh (Figs. 1 and 2).

The laboratory results of the patient were normal and the electrocardiogram revealed sinus rhythm while the chest X-ray showed no signs of abnormalities.

Due to the relatively good clinical status, the patient underwent abdominoplasty as well as repair of the minor umbilical hernia.

Fig. 2. The patient (profile view) before and after surgery.

4. Operative procedure

The operation was performed with the patient in supine position under general anesthesia. A Foley catheter, filled with 10 cc of water, was connected to a manometer. A long transverse incision was performed 10 cm under the umbilicus (Fig. 2). A skin/subcutaneous flap was elevated just superficial to the areolar tissue overlying the anterior rectus sheath and the external oblique muscle fascia from the suprapubic area to the xiphoid. A 6.4 kg skin flap, including all of the subcutaneous tissue, was removed (Fig. 3). Careful hemostasis was performed with the use of electrocoagulation. Inspection of the abdominal wall was conducted and no presence of gap or herniation was found. At no time, during the procedure did the patient show any difficulty in ventilation. The minor wall defect of the umbilical stoma hernia was reconstructed by suturing the gap using two No 2 nylon loop stitches. Four negative pressure drainages were placed to the subcutaneous layer. The closure was completed with Vicryl 1-0 sutures in the superficial fascial system and dermis while for the skin clips were placed.

5. Results – follow-up

After the operation, the patient remained asymptomatic without clinical evidence of recurrence and was discharged from the hospital on the 11th postoperative day. After the initial postoperative healing period, the patient was checked periodically (2 weeks, 2 and 14 months). Postoperatively, the patient noticed extreme improvement of ambulation and postural stability. In the last evaluation – within 14 months after the operation, the patient was remarkably in better shape and weighted 82 kg. Abdominal wall contour and abdominal muscle tone were evaluated. The presence of back pain and gastric disorders were also assessed. The patient was asked to evaluate the presence of pain using VAS (visual analog scale from 0 (no pain) to 10 (severe pain)). The answers regarding the improvement of the symptoms were remarkable. Extreme elimination of the symptoms (back pain, urinary incontinence, gastric disorders) was noticed. Moreover, the psychological status was significantly improved as the patient mentioned herself. The extremely extensive produced heavy abdominal fatty mass acted pressure to the bladder as well as traction to the entire outer urinary system provoking tenderness and discomfort. The neurodystrophy as well as the pressure sores was appeared due to the continually contact and pressure of the mass on the frontal muscles of the lower extremes. Despite the neurodystrophy, the mentioned mechanism resulted in the lack of the physiological ambulation of the patient as well.

6. Discussion

Abdominoplasty is a very common procedure used worldwide for cosmetic purposes. In the world literature, very few cases have been reported presenting abdominoplasty for therapeutic purposes. In 2011, Oneal et al., [1] presented eight female patients who underwent wide abdominal rectus plication abdominoplasty due to severe chronic pain who had failed conservative therapy. In this report, it was mentioned that this type of abdominoplasty procedure produces, firstly, a spine stabilizing effect by tightening the muscles of the lateral abdominal complex, and thus, increasing intra abdominal pressure and secondly, increasing the efficiency of these muscles so that their effectiveness as spine stabilizer is increased. In order to select which patient is suitable for such an operation three things should be pointed: (1) the patient suffers from excessive back pain which does not respond to all conservative measures, (2) the patient exhibits marked lower abdominal wall laxity and weakness, and (3) there is no acute radiographic or clinical evidence of progressive neurologic damage being caused by an identifiable structural lesion in the spine. Additionally, in a study of 25 patients, Toranto [2,3] showed that wide abdominal rectus plication abdominoplasty provided relief in all but one patient who had failed conservative therapy.

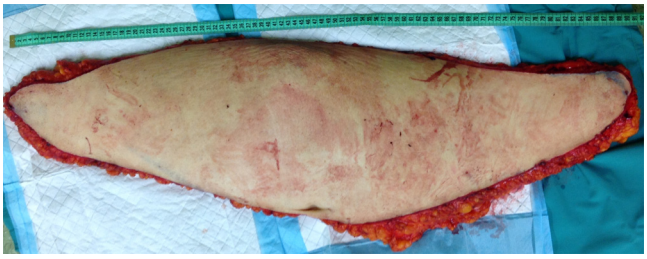

Fig. 3. The removed tissue specimen after surgery (6.4 kg).

As far as the mechanism is concerned, in previous studies, it has been estimated that interventions that increase intra abdominal pressure have been shown to increase spine stability and decrease low back pain [4–6]. In details increasing the efficiency of the muscle by improving its force length positioning allows the muscles that stabilize the spine to do so at lower energy expenditure and to be trained more easily in physical therapy to achieve the desired outcome of pain reduction and spine stability. The functional capacity improvement in the abdominal cylinder gained by the wide abdominal rectus plication abdominoplasty also works to support the natural lordosis of the lumbar spine because the attachments of the thoracolumbar fascia provide an anterior force vector only in the lumbar spine. Supporting the lordosis of the lumber spine has been shown to increase the stability of the spine as well as to decrease low back pain [7,8]. The results of this series are comparable to the results reported by Toranto, in which 24 of 25 patients with marked abdominal wall laxity reported resolution of pre-existing low back pain following wide abdominal rectus plication abdominoplasty [2,3]. Moreover, our patient had a remarkable improvement of the gastric disorders accompanied by conspicuous amelioration of the discomfort and abdominal distention after meal consumption, probably due to the total loss of the abdominal protruded fatty mass. As far as the urinary incontinence is concerned, it disappeared as well.

7. Conclusion

In conclusion, the benefits of abdominoplasty on our patient appeared with elimination of her back pain and neuromyodystrophy of the extremes as well as amelioration of her quality of life with less gastrointestinal disorders including regurgitation and defecation and complete improvement of urinary incontinence. Even though it is presented only one case, based on the previous studies and the fact that our patient showed notable improvement of her health status and complete autonomy to perform her daily activities, we strongly suggest that abdominoplasty could be used not only for cosmetic reasons but also for therapeutic purposes.

Conflicts of interest

No.

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Ethical approval

Yes.

Consent

Yes.

Author contribution

IP: leader surgeon final review of the case report.SX: contributed in the collection of data and narration of the manuscript.AA: collection of data.GP: collection of data.GC: comments on the manuscript.

Guarantor

IP.

Key learning points

- Excessive drooping belly may lead to severe issues majorly affecting the person's health as well as the quality of life.
- Abdominoplasty could be used not only for cosmetic purposes but also for therapeutic purposes by eliminating morbidity and improving the quality of life.

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