American Journal of Medicine and Medical Sciences 2024, 14(2): 198-200
DOI: 10.5923/j.ajmms.20241402.06

Surgical Treatment of Ventral Hernias in Patients with Morbid Obesity and Abdominopotosis (Literature Review)

Khaydarova L. O.

Department of General Surgery, Samarkand State Medical University, Samarkand, Uzbekistan

Abstract Today obesity has become widespread all over the world. The World Health Organisation (WHO) has recognised obesity as a new non-communicable "epidemic of the 21st century". In Uzbekistan not less than 20% of the able-bodied population have overweight and obesity, and these indicators tend to grow. Obesity is the cause of many serious diseases that significantly increase the risk of premature death. Obesity-related diseases cause significant material costs for treatment.

Keywords Surgical treatment, Ventral hernia, Morbid obesity, Abdominopotosis

1. Introduction

Currently, the most common is the classification of overweight, based on the definition of the so-called body mass index (BMI) or Kettle's index, adopted by the International Obesity Task Force (IOTF), is the ratio of weight in kilograms to the square of height in metres. The ideal BMI is 18.5-24.9 kg/m". Obesity proper is preceded by a condition labelled as overweight with a BMI range of 25 kg/m" to 29.9 kg/m". This has an increased risk of comorbidities compared to the population average. A BMI of 30-34.9 kg/m" indicates obesity of the first degree with a high risk of comorbidities. BMI 35.0-39.9 kg/m "characterises the II degree of obesity with a very high risk of comorbidities, and BMI>40 kg/m" speaks of the presence of obesity of the III degree or morbid obesity with an extremely high risk of comorbidities and, as a rule, already existing in the patient. Some authors also distinguish super obesity - with a BMI of more than 45 kg/m".

BMI over 30 kg/m" indicates the presence of obesity, but some researchers [8,15] do not agree that all people with a BMI of 25-27 kg/m" are overweight. Such BMI may be due to constitutional features (pronounced hyperstenics), good development of musculature. As is known, the mass of the same volume of muscle and fat tissue will be different, muscle tissue is heavier. Therefore, other classifications are currently being discussed, in particular those based on the definition of total fat mass and abdominal fat mass [12].

Abdominal obesity is an independent etiological factor in the formation of hernias of the anterior abdominal wall. This is due to the fact that in obesity the muscles of the anterior abdominal wall are atrophic and flabby. Masses of fat under the action of gravity and due to loose connection with the aponeurosis slide down, forming a thick skin and fat apron, the constant load from which leads to degenerative changes in the muscles and overstretching of aponeurotic and fascial layers [8,10]. Back in 1950. A.P. Krymov distinguished 2 groups of causes leading to the occurrence of hernias of the anterior abdominal wall. The first group is factors that somehow increase intra-abdominal pressure and the second group is factors that weaken the anterior abdominal wall. Obesity can be categorised as either the first or the second group. According to the data of the study, conducted in our days, statistically significant increase in the rate of recurrence of ventral hernia depending on body weight.

According to the classification of prolapse of the tissues of the anterior abdominal wall (abdominoptosis) in the standing position according to A. Matarasso distinguish the following degrees: [1,7]

I degree (minimal) - stretching of the skin without the formation of skin-fat folds;

II degree (medium) - formation of a small skin-fat fold, which clearly hangs down in the "diver's" posture;

III degree (moderate) - skin-fat apron within the flanks, hanging in an upright position, "pinch" less than 10 cm;

IV degree (severe) - skin-fat apron within the lumbar region, "pinch" more than 10 cm, combined with skin-fat folds in the subscapular regions.

Skin-fat "apron" in obese patients is singled out by some researchers as an independent cause of primary ventral hernia formation, as it creates a constant static load on the aponeurosis. In combination with the initial increased IAP,

Received: Jan. 10, 2024; Accepted: Jan. 29, 2024; Published: Feb. 4, 2024
Published online at http://journal.sapub.org/ajmms

it creates a greater load on the aponeurosis sutures after surgery. This leads to their rupture and hernia formation [6,11].

Thus, obesity, being a frequent companion of patients with postoperative hernias, on the one hand, predisposes to hernia formation, on the other hand - progresses at its appearance. A kind of vicious circle is created: obesity forms a hernia, reduces and already low physical activity of the patient, which, in turn, contributes to the growth of body weight, increasing the degree of obesity and worsening the course of comorbidities. All this significantly and progressively worsens the quality of life of patients: social adaptation, efficiency, ability to serve themselves, depression up to suicide attempts are observed [9,13].

Having got rid of morbid obesity associated diseases (including hernia), patients return to active life, acquiring the state of psychological comfort lost many years ago [7,12]. Their quality of life is improved and there is hope for weight loss.

Today in the literature, most authors do not single out patients with obesity during herniological operations as a separate category. It is necessary to understand that obesity is one of the causes of hernia formation. A certain concept of POVH prophylaxis in obese patients is required.

Skin-fat apron, often present in obese patients, is not only a cosmetic defect. It causes a high incidence of postoperative local complications [1,3] and is an independent cause of ventral hernia formation. Its presence limits physical activity, complicates hygienic care of the body, leads to maceration of the skin, pyoderma, which causes discomfort and even suffering and significantly reduces the quality of life. Ballast "hanging abdomen" in combination with hernia protrusion can lead to a specific orthostatic syndrome, manifested by low back pain, urinary incontinence. In the saggy skin fold, as a rule, due to persistent diaper rash, skin maceration, there is a tendency to lymphothrombosis with subsequent malignisation of the skin. Trophic disorders, persistent inflammation can be explained by a decrease in the number of capillaries per unit of tissue mass and microcirculation disorders in the area of the postoperative wound, which is less frequent in patients with normal body weight [4,6].

Modern requirements for hernia surgery are not limited to the elimination of only the hernia defect. It is desirable that the surgery of venous-neutral hernias strived to solve the problems of aesthetic character. The damage of the abdominal appearance imprints on the character of a person, affects his personal life, professional and social functions [5,8].

Nowadays dermatolipectomy (DLE) as an independent operation and as a stage of abdominoplasty is quite common in plastic surgery. Wide mobilisation of the skin-fat flap allows to evaluate the state of tissues around the aponeurosis defect, to identify additional hernia gates and weak areas. But the attitude to DLE, performed simultaneous at herniorrhaphy, among surgeons is ambiguous. Many agree with the statement that obesity is a dominant factor in the development of postoperative hernias and only a few note the need to remove in ventral herniotomy skin and fat apron. Some surgeons agree that the use of DLE in patients with POVH and obesity improves the course of the postoperative period, reduces the number of complications and gives better immediate and long-term results. As the integrity of the aponeurosis is restored and the silhouette of the figure is improved, relative comfort is created without eliminating the underlying cause of obesity.

But there is another point of view. Subcutaneous fatty tissue is very sensitive to any trauma, so opponents of DLE, performed simultaneous with hernioplasty, explain their position by a significant increase in the incidence of local complications - haematomas, infection, necrosis. In all techniques of DLE as a stage of abdominoplasty a significant detachment of the skin and fat tissue is supposed to be performed, which leads to complications. Some authors consider the presence of scars of the anterior abdominal wall in combination with excessive subcutaneous fat layer as contraindications to DLE, because this provides inadequate blood supply of the excised flaps and creates prerequisites for the occurrence of marginal necrosis.

At the same time, other studies have shown that additional DLE in combination with other types of surgical intervention do not increase the number of local complications.

2. Conclusions

Thus, it is obvious that there is still no consensus among surgeons in choosing the method and volume of surgical intervention in overweight and obese patients with postoperative and recurrent ventral hernias. In addition to the development of a unified concept, the following tasks are relevant: not only to perform GP in an obese patient without recurrence, but also not to neglect the aesthetic component. In this connection it is necessary to optimise and develop algorithms of surgical treatment for this category of patients.

REFERENCES

[1] Abramov V.A. Duplicate suture for prevention and treatment of postoperative ventral hernias: Cand. of medical sciences: Abramov Vladimir Aleksandrovich. - Nizhny Novgorod, 2009. - 24c.

[2] Antoniuk S. M. et al. Features of the prevention of postoperative complications in alloplasty of large and giant postoperative ventral hernias // Universitetskaya klinika. - 2017. - T. 12. - №. 2. - C. 23-26.

[3] Belosludtsev D.N. Choice of alloplasty method in the treatment of postoperative ventral hernias: Cand. of medical sciences. - N. Novgorod, 2007. C. 32

[4] Vlasov A.V. Prevention of the wound complications at the abdominal wall prosthetics in the treatment of the ventral hernias. // Dissertation of the candidate of medical sciences. Nizhny Novgorod - 2013. C. 109.

[5] Zhebrovsky V.V.. Surgery of abdominal hernias and eutentrations

/ V.V. Zhebrovsky // Moscow: MIL, 2009. - 440c.

[6] Zhukov B.N. Effectiveness of laser therapy and mesh endoprosthesis application at the pinched ventral hernias / B.N. Zhukov, S.A. Bystrov, E.V. Shestakov, G.V. Yarovenko // Proceedings of the VII All-Russian Conf. of general surgeons with international participation (Krasnoyarsk, 17-18 May, 2012) / Ed. by V.K. Gostischev; Editor-in-Chief: V.A. Kubyshkin [et al.]. - Krasnoyarsk: Verso, 2012. C. 316-318.

[7] Isanturdiev U.I. et al. Modern principles of treatment of pinched large hernias of the anterior abdominal wall of the abdomen // Vestnik of Emergency Medicine. - 2013. - №. 3.

[8] Kochnev O.S., Izmailov S.G., Monograph "Methods of suturing wounds". Kazan State University Publishing House, 1992. P. 85.

[9] Lebedev S.N. et al. Analysis of non-operative predictors of postoperative ventral hernias // Perm Medical Journal. - 2017. - T. 34. - №. 6.

[10] Lembas A.N., Complications of prosthetic hernioplasty in the treatment of primary and postoperative ventral hernias / A.N. Lembas [et al.] // Modern technologies and opportunities of reconstructive and aesthetic surgery: Mater. Sixth International Conf., Moscow, 17-18 April 2012 / edited by V.A. Kubyshkin, A.A. Adamyan - P. 149-151. 149-151.

[11] Pavlenko V.V., Analysis of the results of the wound complications prophylaxis at the incisional hernias of large and medium sizes / V.V.. Pavlenko, D.G. Postnikov // XI Congress of Surgeons of the Russian Federation: proceedings of the Congress, Volgograd, 25-27 May 2011 / Volgograd, Gos. med. un. ed. by B.C. Savelyev [et al]. - Volgograd: VolgSMU Publishing House, 2011. C. 262-263.

[12] Protasov A. V. et al. Tension-free plasty of giant hernias of the anterior abdominal wall // Operative Surgery and Clinical Anatomy. - 2017. - T. 1. - №. 2. - C. 21-29.

[13] Teshayev O.R., Hayitov I.B., Sapaev D.A., Dadajonov E.M., Tavasharov B.N. Abdominoplasty of postoperative ventral hernia in patients with obesity III-IV degree // Problems of Biology and Medicine. - Samarkand. - 2011. - №3(66). - C. 124 - 127.

[14] Timerbulatov V.M., Popov O.S., Popova O.V. et al. // Abdominoplasty at operations for ventral hernia. Surgery 2006; 4: P. 24-27.

[15] Chernykh A.V. et al. Clinical and anatomical study of a new way to reduce intra-abdominal pressure during prosthetic plasty of midline postoperative anterior abdominal wall hernias // Morphological Vedomosti. - 2017. - T. 25. - №. 3. - C. 26-31.