

# INTESTINAL SUTURES

*Speaker:*

*Foremother Valeriya*



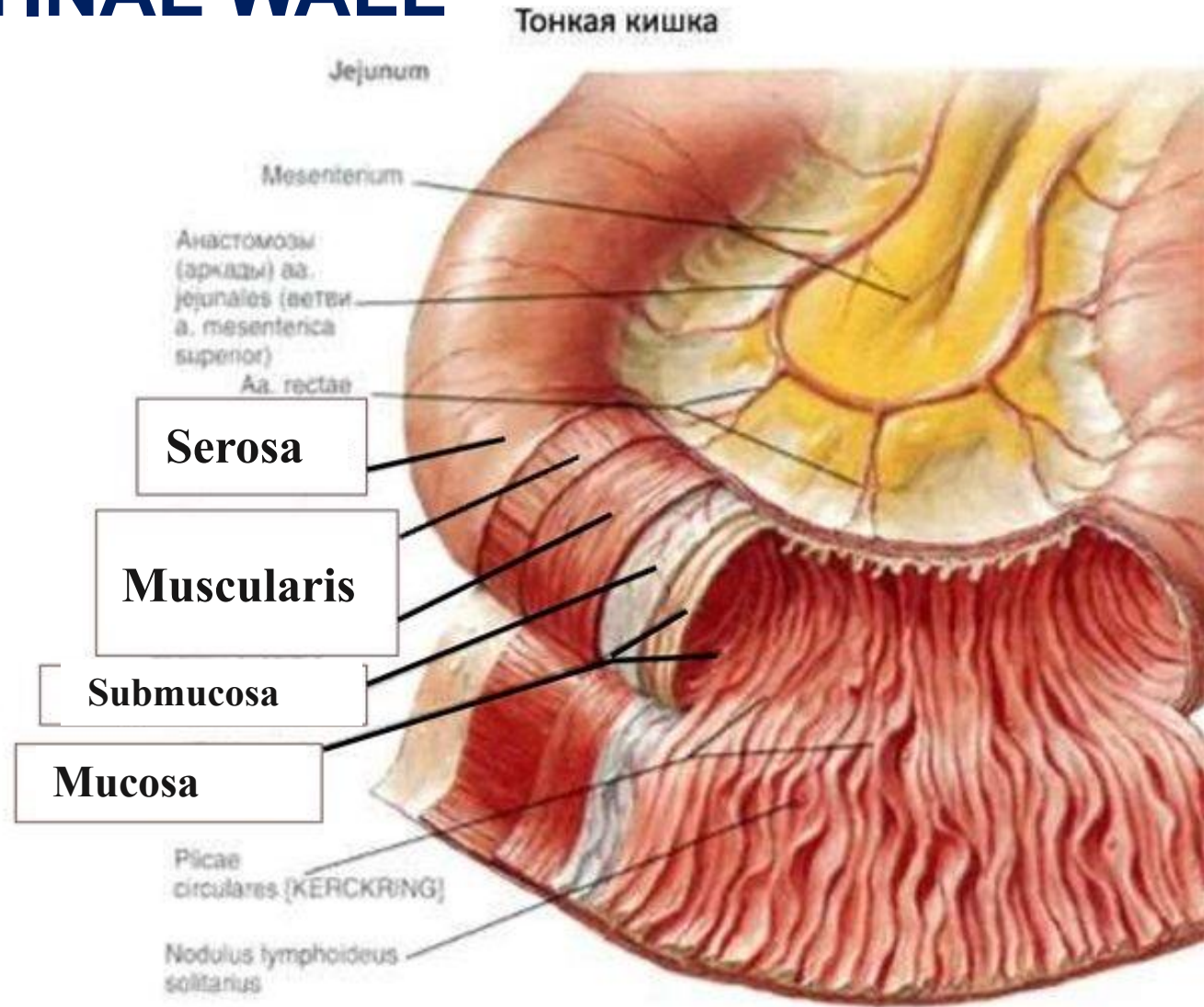
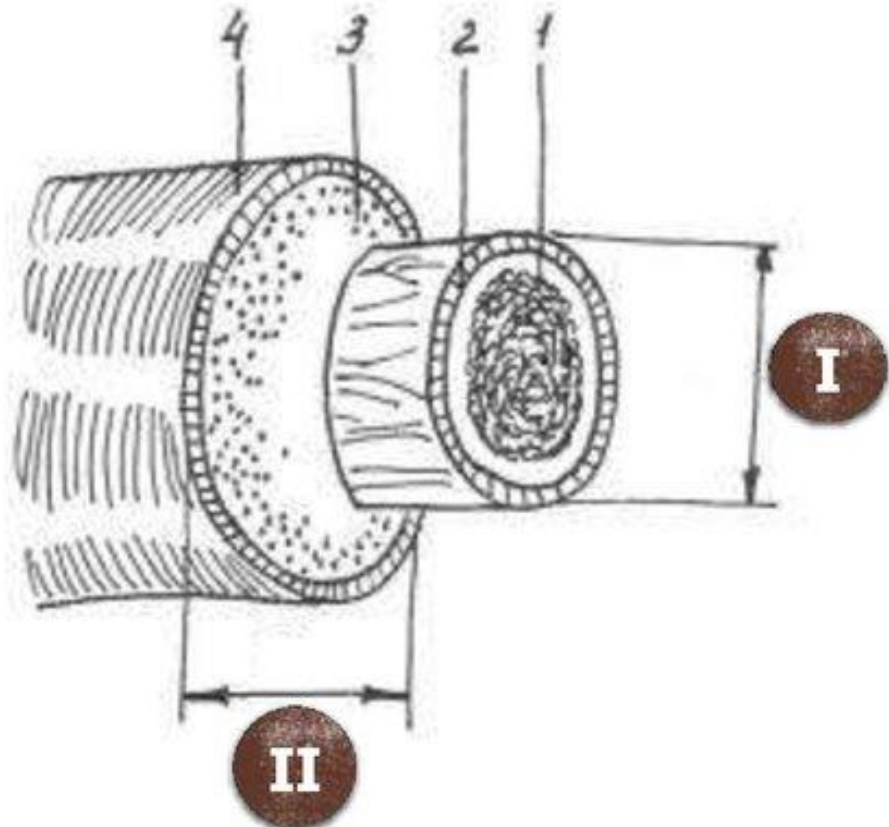
**Intestinal suture** is the term that unites suturing of wounds and defects of the abdominal part of the esophagus, stomach, intestines.





# STRUCTURE OF INTESTINAL WALL

## СЛОИ И ФУТЛЯРНОСТЬ



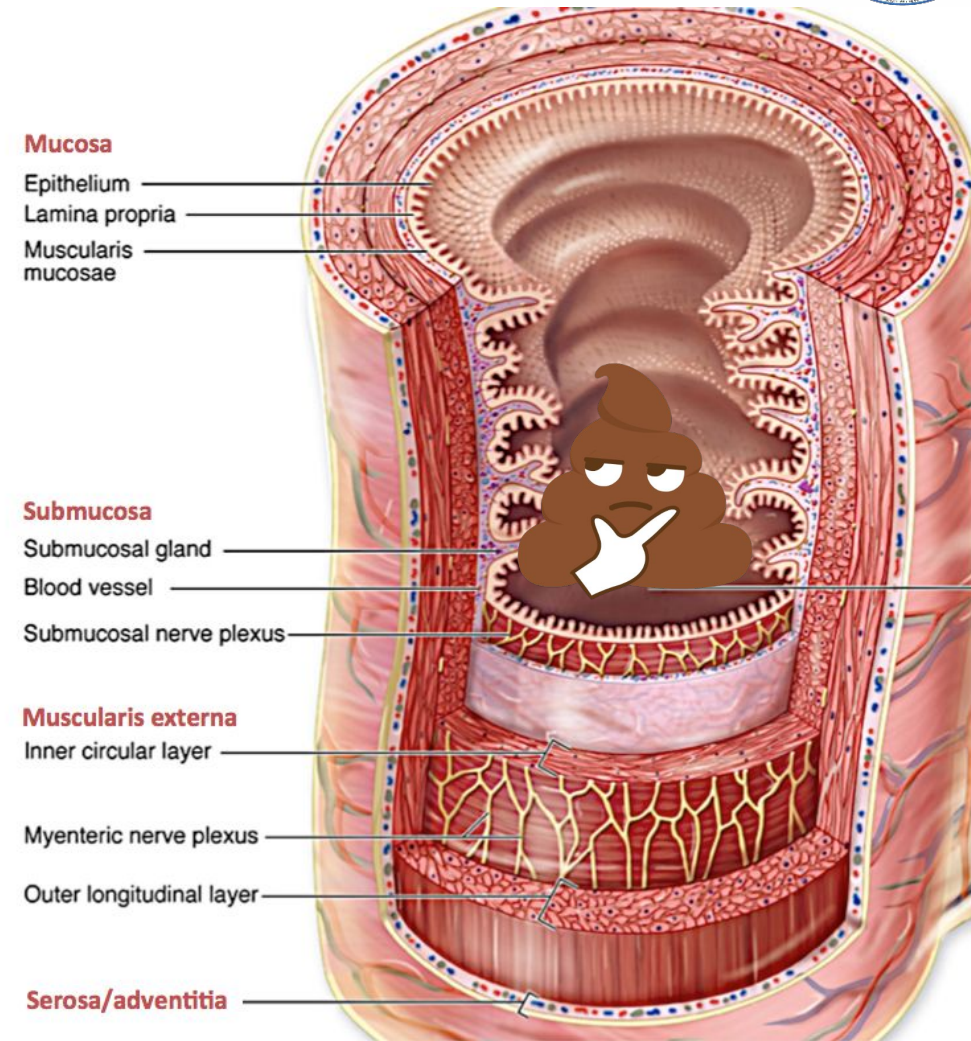
I – Internal sheath; II – External sheath.

Layers: 1 – mucosa; 2 – Submucosa; 3 – Muscularis; 4 – Serosa.



## Features of intestinal layers:

- 1. Serosa** – layers can stick together in 12-14 hours and grow together in 1-2 days. This layer ensures containment of the intestinal suture (the suture pitch is not more than 2.5 mm);
- 2. Muscular** – smooth muscles provide elasticity to the suture line.
- 3. Submucosa** – its connection ensures mechanical toughness and good vascularization of suture.
- 4. Mucosa** – connection of the edges of the wound provides good hemostasis.





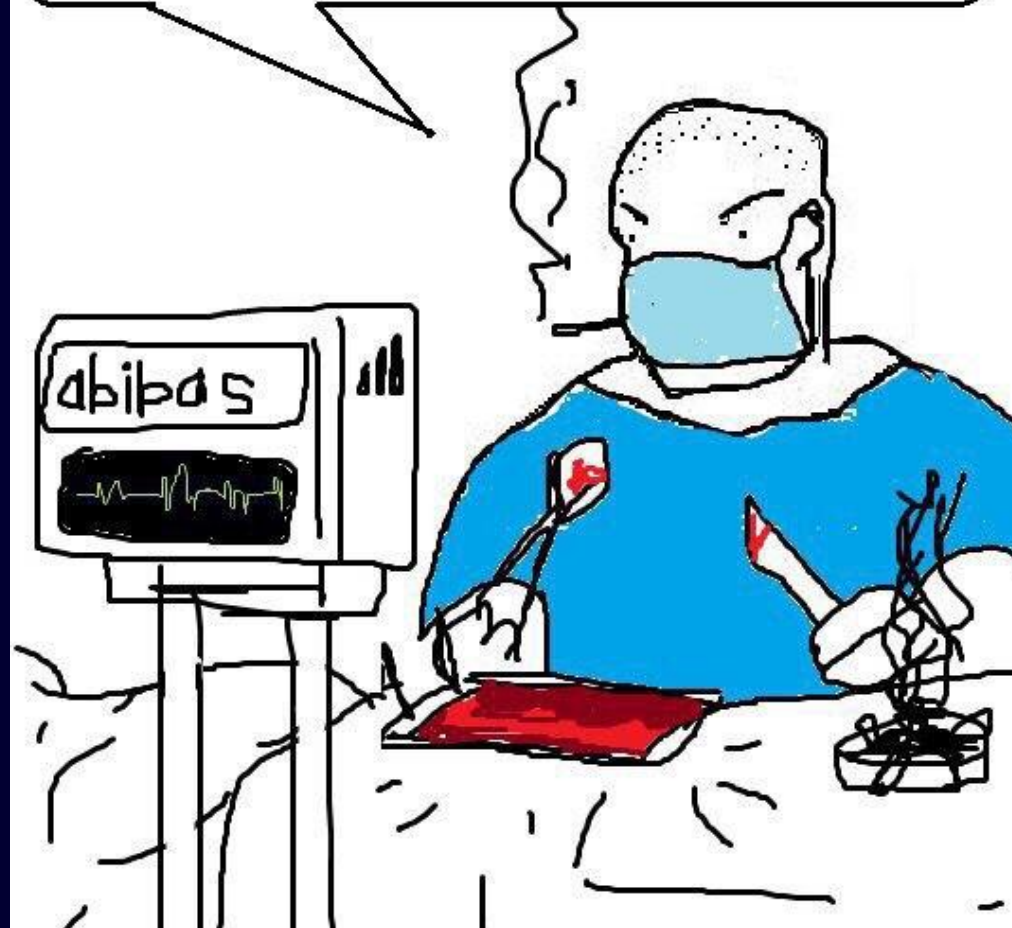
# Requirements for intestinal suture:

1. Containment;
2. Hemostasis without serious interruption of blood circulation of the suture line;
3. According to layers structure;
4. Toughness;
5. Primary intention is most likely;
6. Minimal trauma of organ's walls;
7. Prevention of extensive marginal necrosis of the organ's walls;
8. Rightful layers connection;
9. Considering for the possibility of eruption of seams;
0. Using absorbable suture materials.



# TYPES OF INTESTINAL SUTURES

Так... если накладываем шов Матешука, нужно пройти через серозную и мышечную оболочки, не задев подслизистую... так, теперь выводим нить и выходим изнутри... а как его изнутри завязать... Так, пададжи ёмана





# Le classification:

## **I. By its location according to margins of the wound:**

1. Marginal;
  - 1) One-sheath sutures (serous-muscular or mucous-submucous);
  - 2) Two-sheath sutures (through-and-through);
2. Non-marginal;
3. Combined.

## **II. By its location according to wound edges:**

1. Inverting;
2. Everting.

## **III. By overlay method:**

1. Manual;
2. Mechanical.

## **IV. By piercing through intestinal layers:**

1. Aseptic;
2. Non-aseptic.

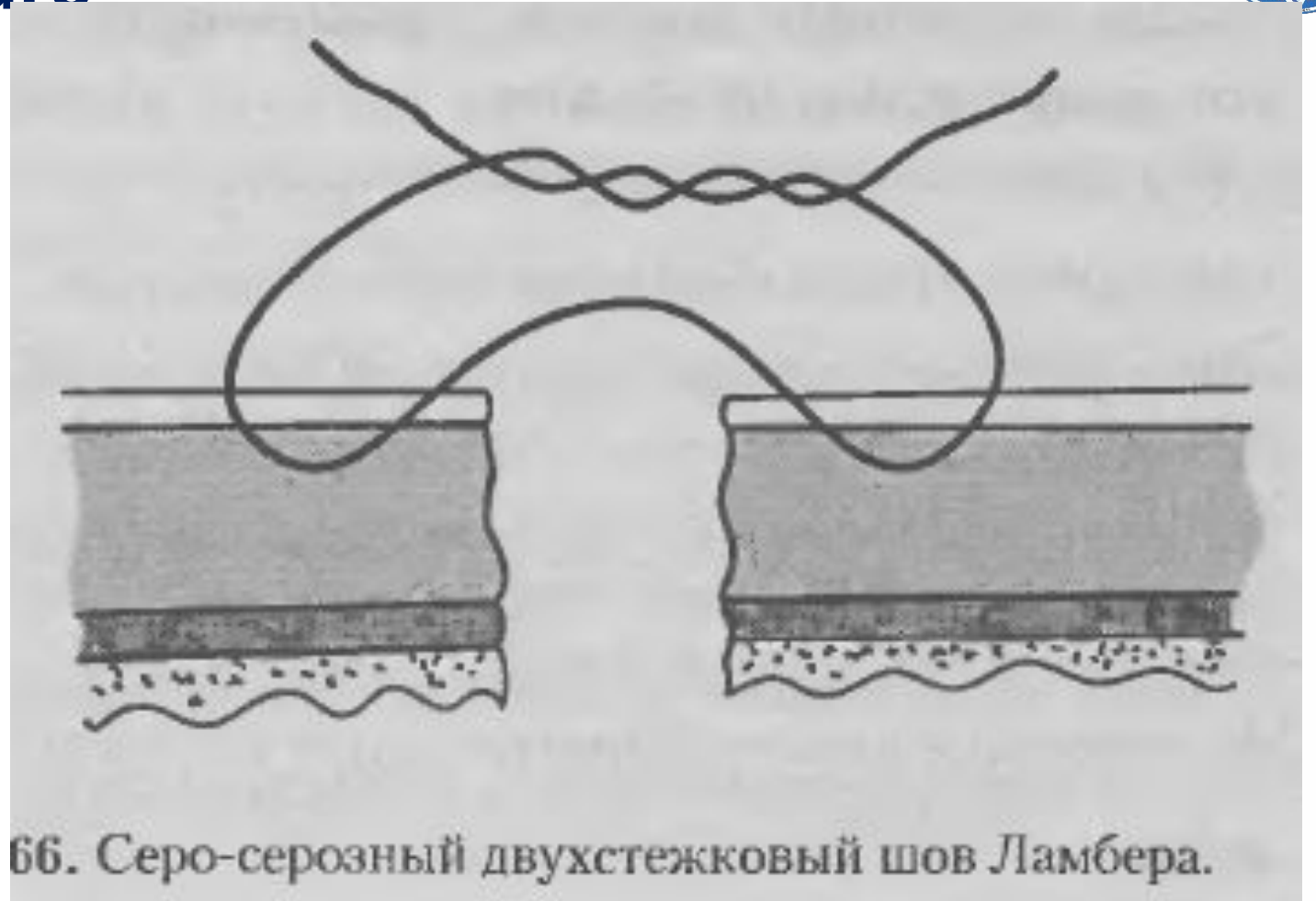
## **V. By number of row:**

1. One row;
2. Double row;
3. Triple row.



# 1. Serous-muscular, unpenetrated, invaginate, aseptic (or “2-nd row”) Lambert suture

- Non-marginal suture;
- No hemostatic effect;
- No toughness after applying;
- Provides no adaptation to mucous and submucous layers.



**Can be used only in combination w  
other sutures!**





## 2. Marginal serous-muscular sutures.

### Mateshuk suture

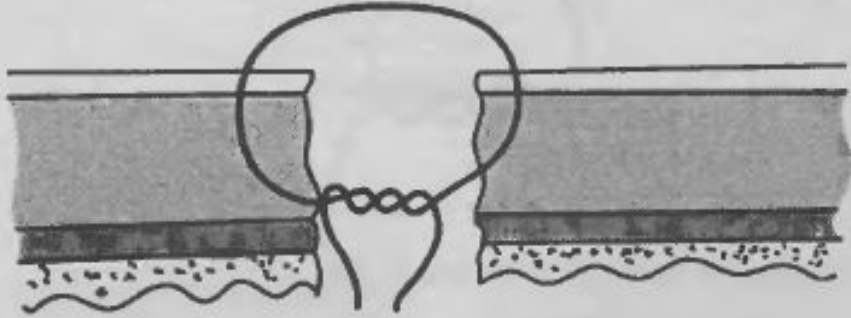


Рис. 67. Краевой серозно-мышечный шов Матешука.

- + Toughness, good adaptation, according to layers structure;
- + Prevents wall corrugation;
- + Prevents organ's stenosis.
- Can be infected easily;
- High capillary effect (because of knot);
- High chances to healing with secondary intension (granulation).

ОДНОЗНАЧНО НЕ ТВОЙ БРО.

### Bier suture

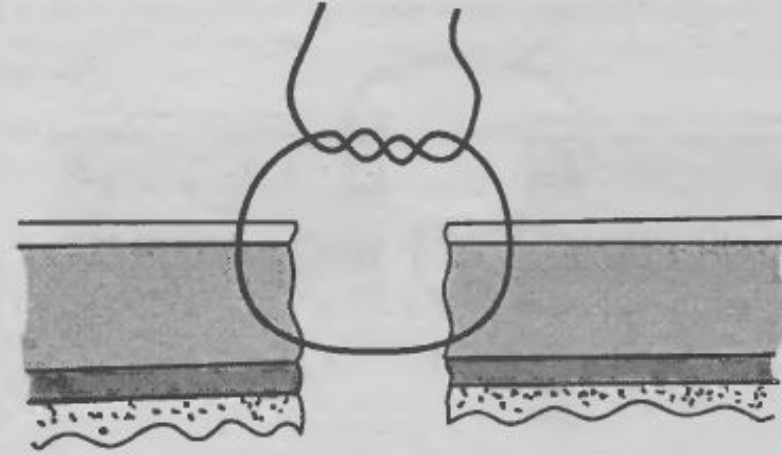


Рис. 68. Однорядный краевой серозно-мышечный шов Бира.

- + the same advantages as Mateshuk suture;
- Bad hemostatic effect;
- Bad adaptation of layers;
- Complexity.

## Double row combined Czerny separate suture

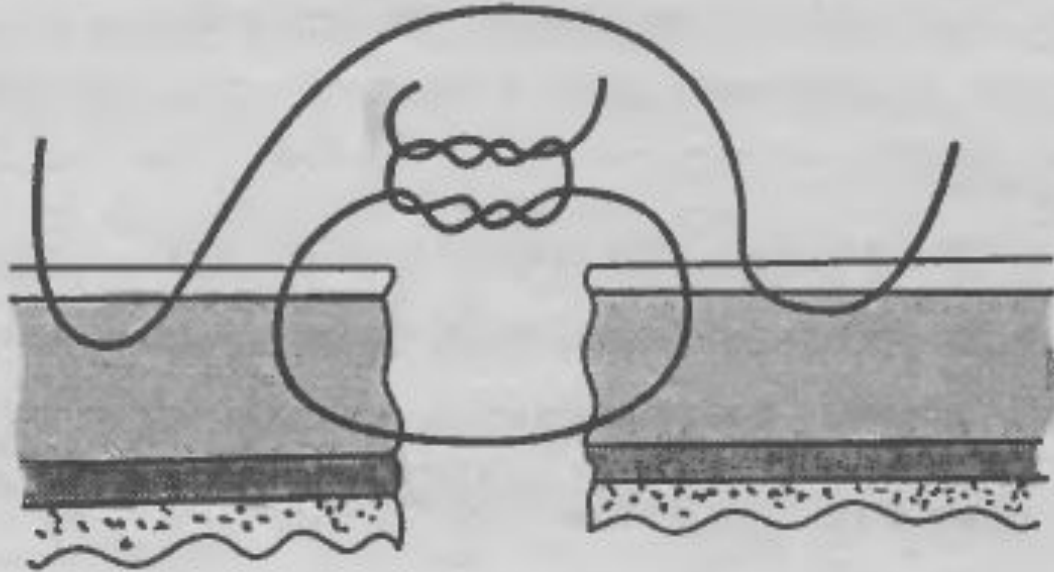


Рис. 69. Двухрядный комбинированный серозно-мышечный узловой шов Черни.

- + Toughness, good adaptation, according to layers structure;
- + Prevents wall corrugation;
- + Prevents organ's stenosis.
- Poor hemostatic effect;
- Difficulty of ensuring full adaptation of layers;
- Complexity.

# 3. Serous-muscular-submucous marginal sutures



## Pirogov suture

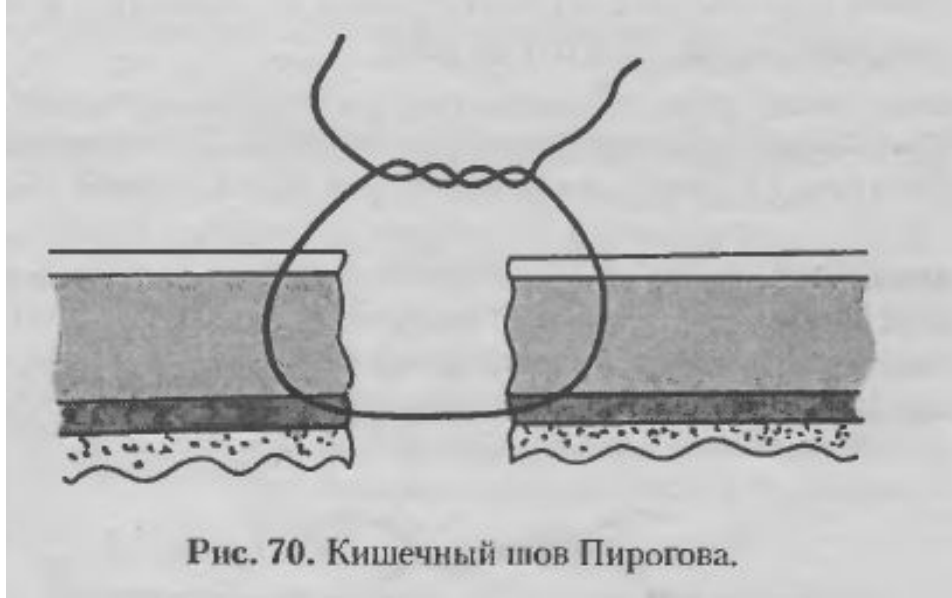


Рис. 70. Кишечный шов Пирогова.

- + Great toughness, good adaptation;
- + very good hemostatic effect;
- + No rigidity and infection on a suture line;
- + Fast wound healing with primary tension.
- Adhesions are possible;
- Infection in other layers is possible in case of thread wicking effect;
- Tissue reaction is possible;
- frequent anastomosis failure (1-19%).

## Kirpatovsky suture

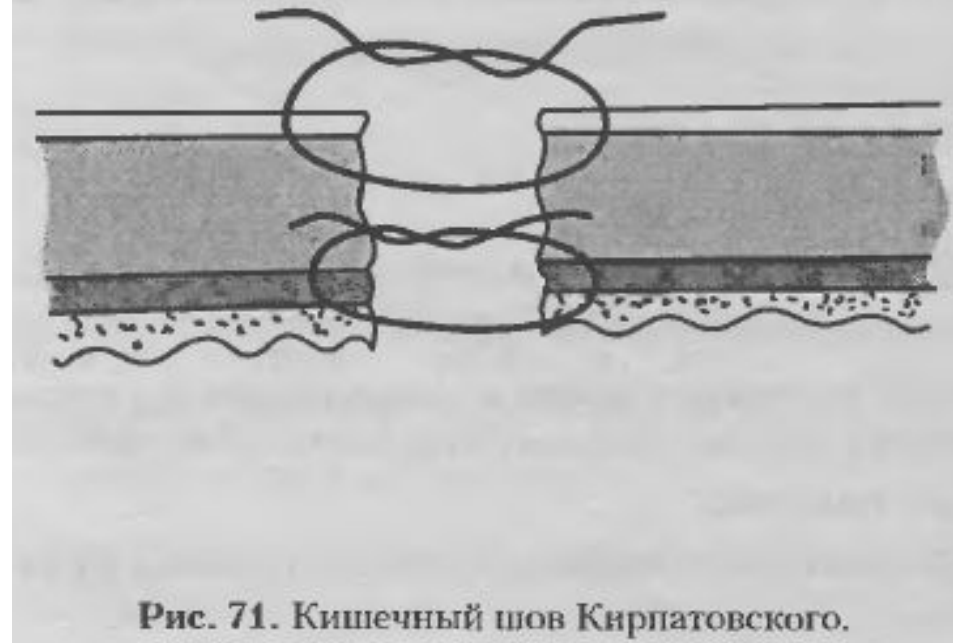


Рис. 71. Кишечный шов Кирпатовского.

- + the same advantages as Pirogov suture.
- Skin corrugation and stenosis;
- High rigidity of a suture line;
- Wicking effect is possible (depends on suture material);
- Big postoperative scar.



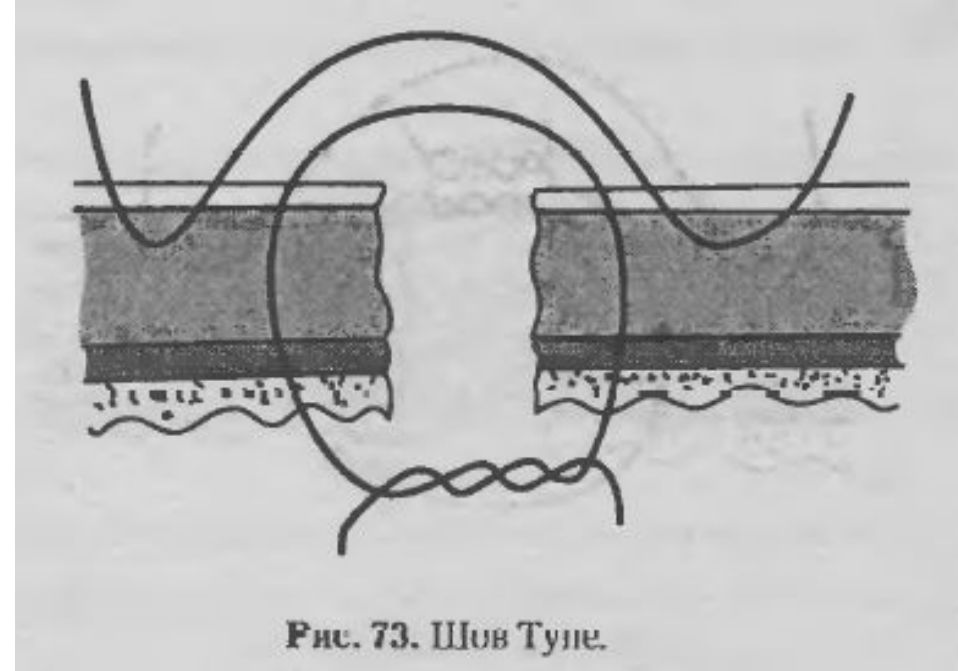
## 4. Double row combined sutures

### Albert suture



- + Toughness, good adaptation, according to layers structure, good hemostasis;
- + containment, aseptic;
- + Simplicity of applying.
- Inflammation on a suture line is possible;
- Slow tissue regeneration, massive skin corrugation;
- Secondary intension, necrosis can happen;
- Prolapse of mucous membrane;
- Adhesions are possible.

### Taupe suture



- More complex version of Albert suture.

## Double row combined inverting Schmiden suture



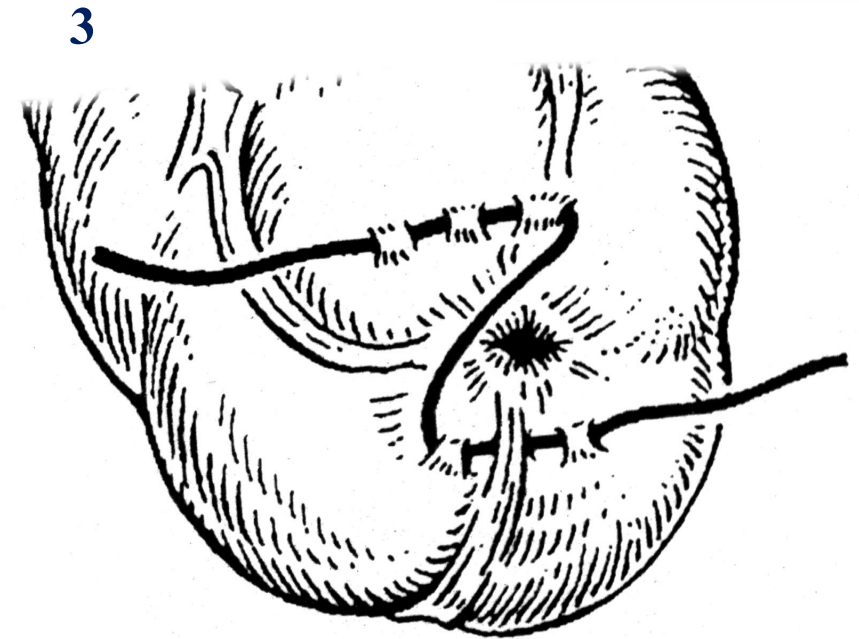
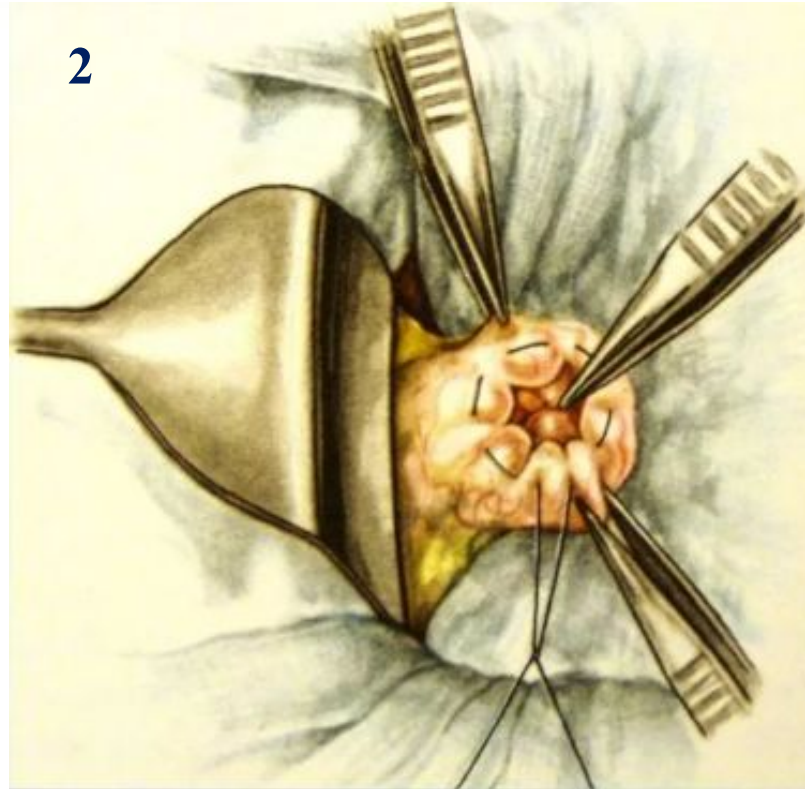
- + Has all the advantages of Albert suture;
- + Speed of applying.
- Bad layers adaptation of intestinal wall because of tissue corrugation.



# 5. Triple row sutures

Versions:

1. Marginal through-and-through suture + serous-muscular marginal suture + serous muscular non-marginal suture;
2. Marginal mucous suture + serous-muscular marginal suture + serous muscular non-marginal suture;

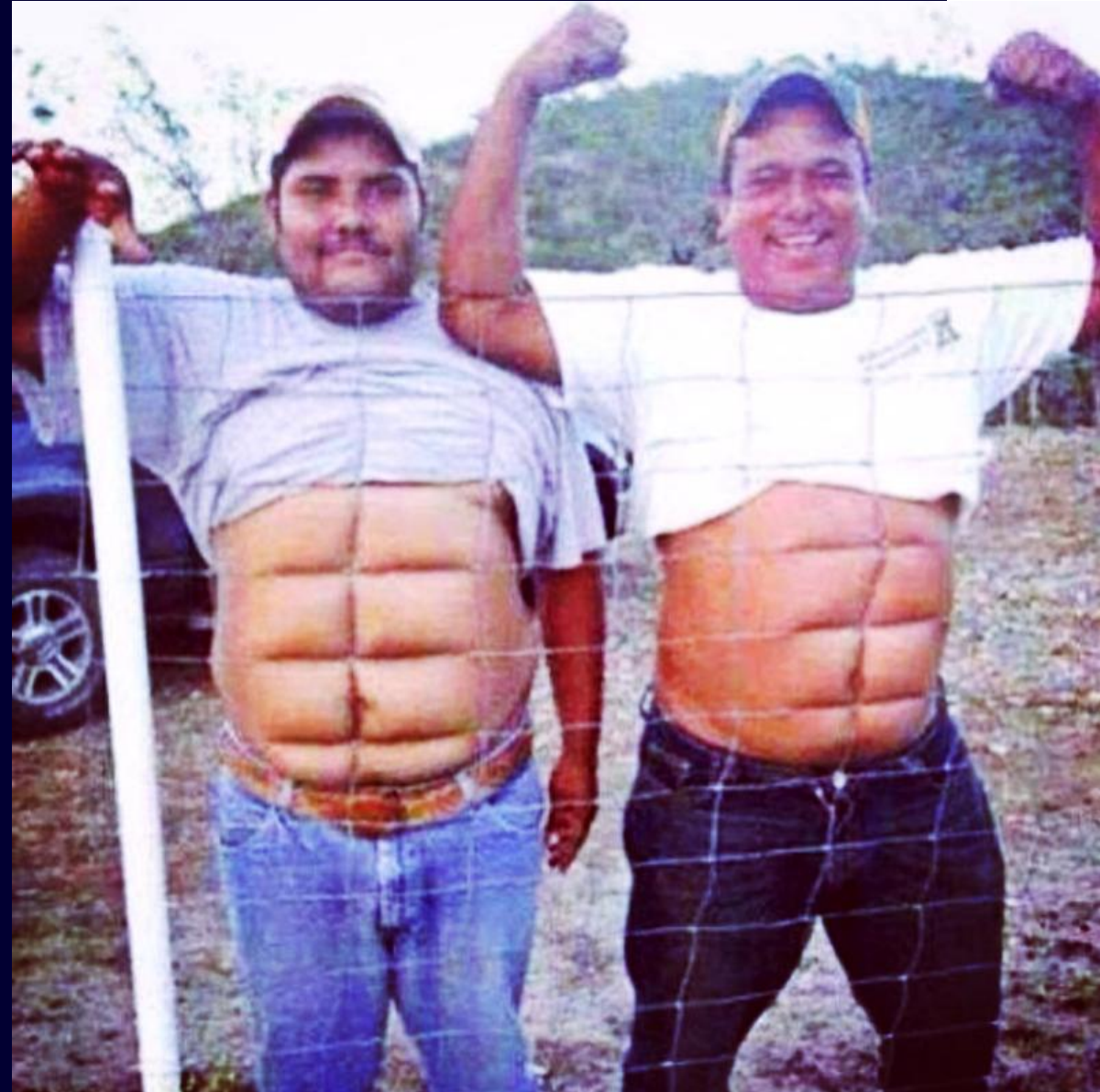


Intestinal stump suturing by triple row suture.

- 1 – Continuous wrapping through-and-through suture;
- 2 – planar simple purse string serous-muscular suture;
- 3 – Z-shaped planar purse string serous-muscular suture.

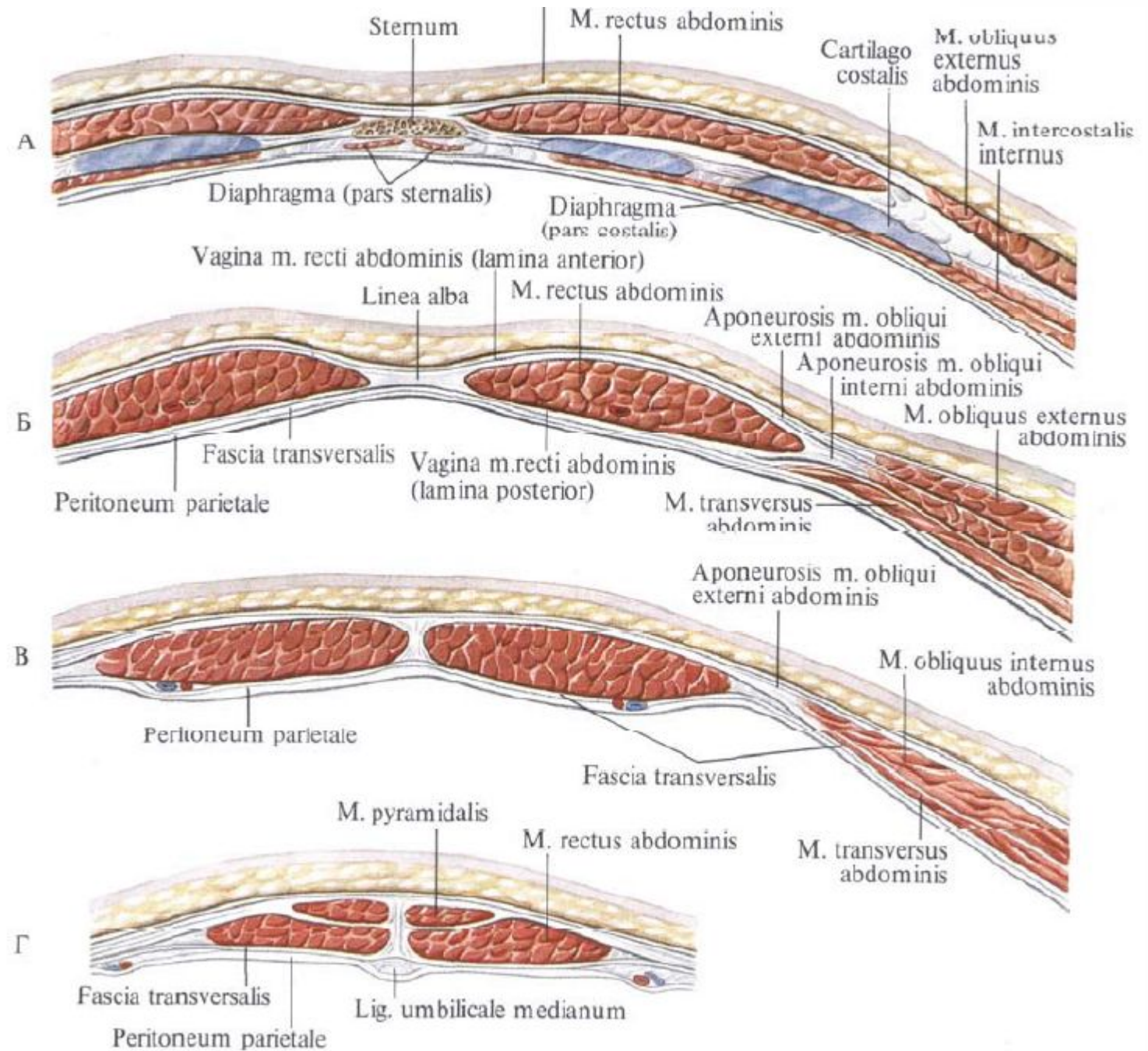


# ANTERIOR ABDOMINAL WALL



## Layers of anterior abdominal wall:

1. Skin;
2. Fatty tissue;
3. Proper fascia of external oblique muscles;
4. External oblique muscles;
5. Internal oblique muscles + its fascia;
6. Transversal abdominal muscles + its fascia;
7. Transversal fascia;
8. Parietal peritoneum.





The background is a pixelated, low-resolution image. It features a repeating pattern of grey cats with large, simple eyes. Each cat is holding a pink rectangular sign with small, indistinct pink dots. Behind the cats are horizontal rainbow stripes. The entire scene is set against a dark blue background with some white pixelated specks.

Thanks for your attention :3