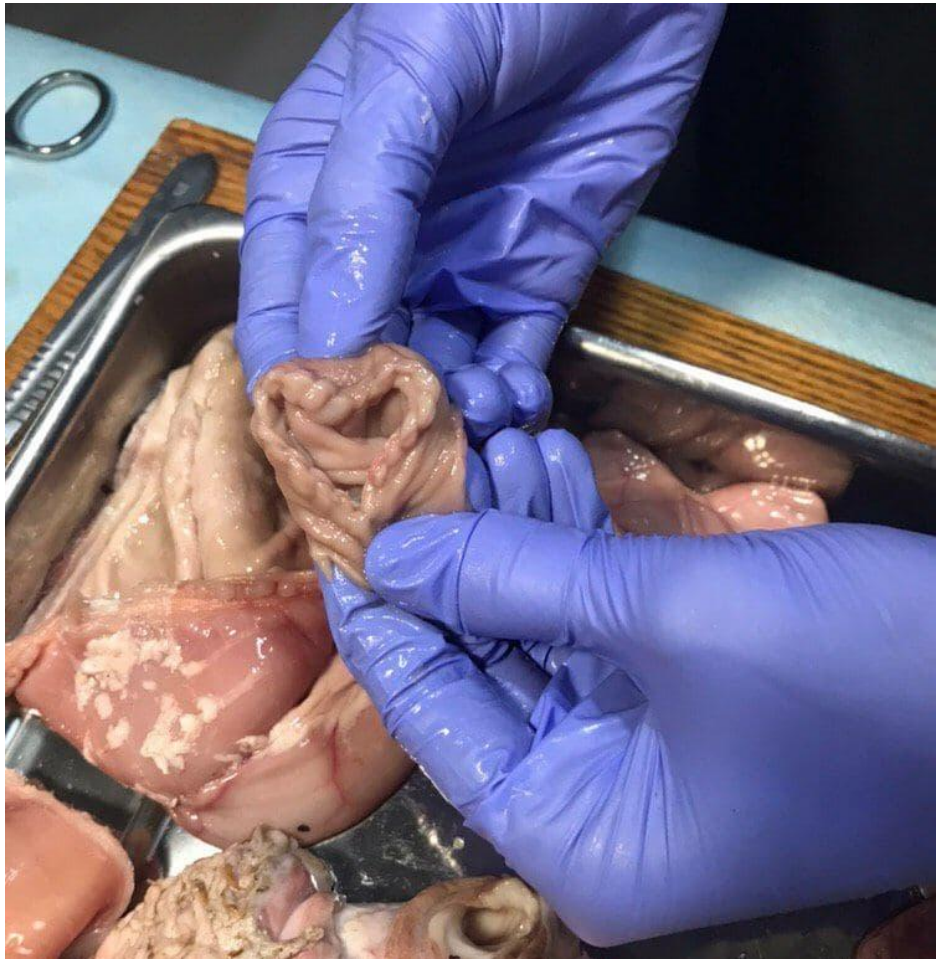


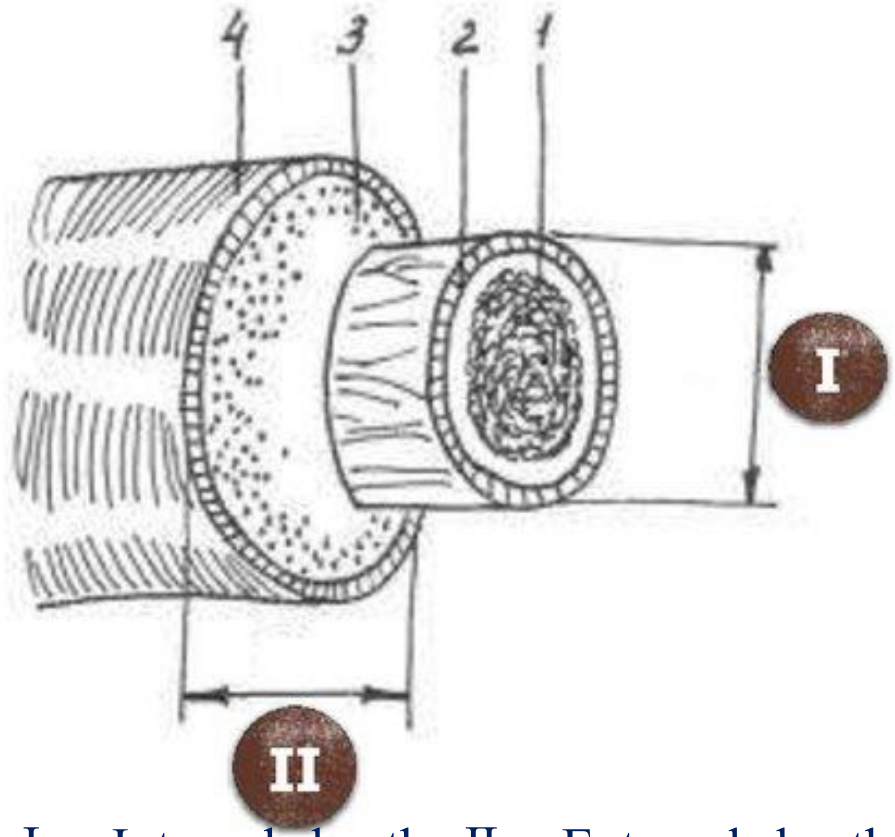
INTESTINAL SUTURES

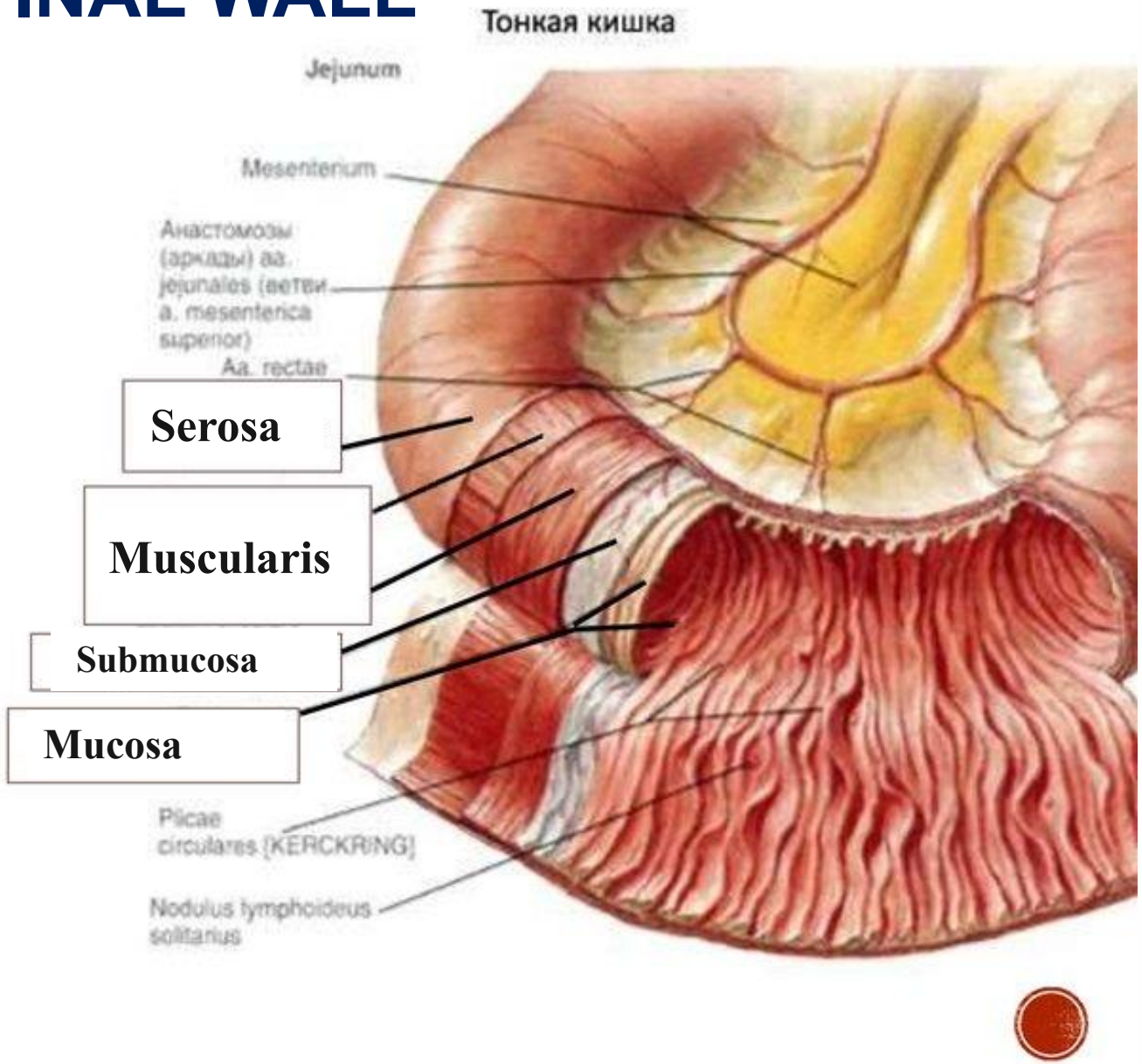
Speaker:

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



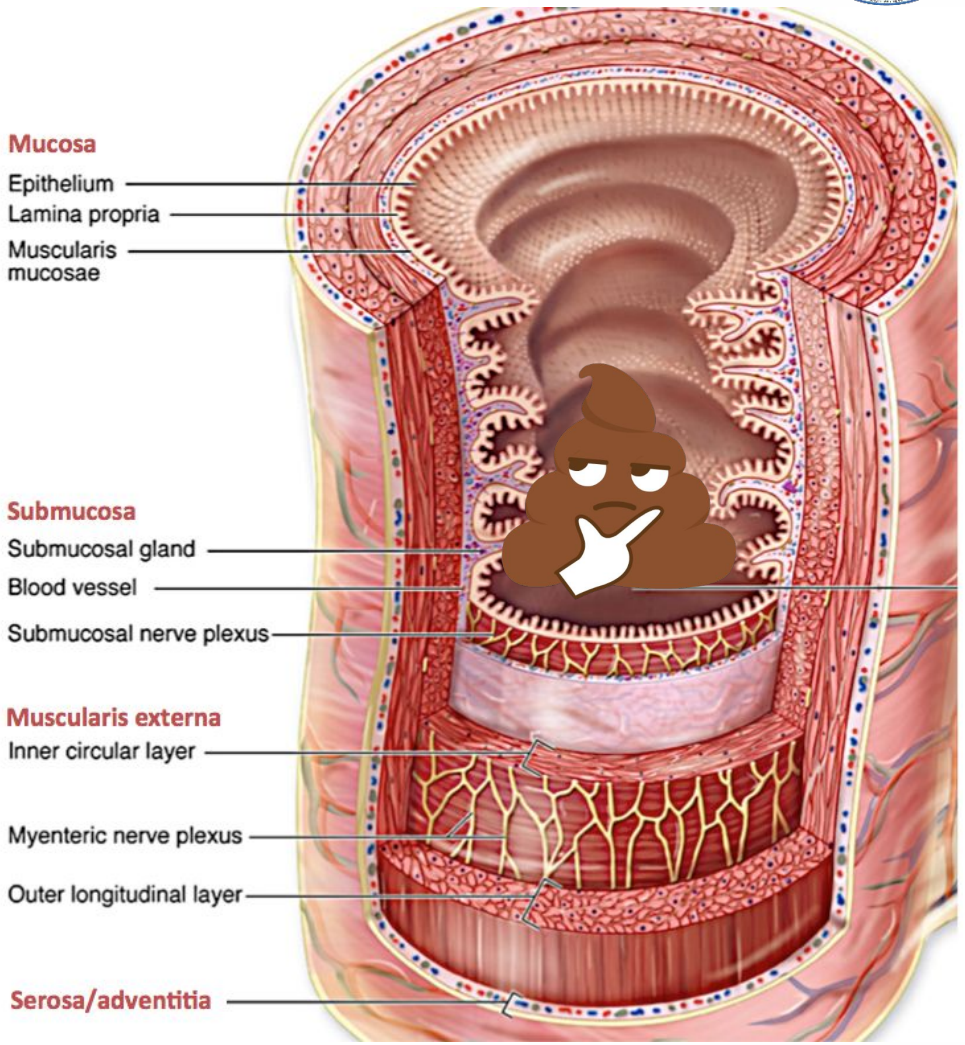


I – Internal sheath; II – External sheath.

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

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:

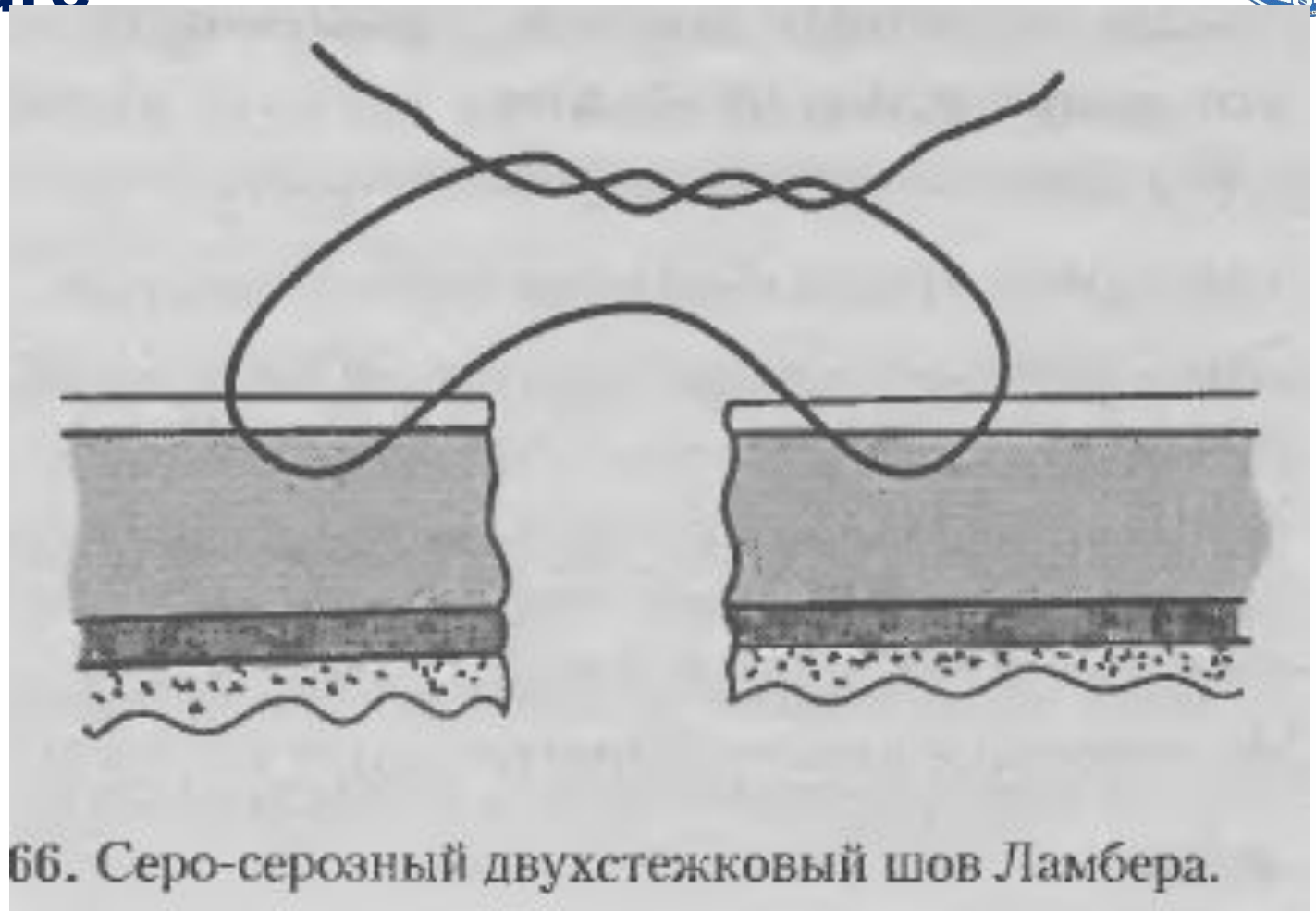
1. Aseptic;
2. Non-aseptic.

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.



66. Серо-серозный двухстежковый шов Ламбера.

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

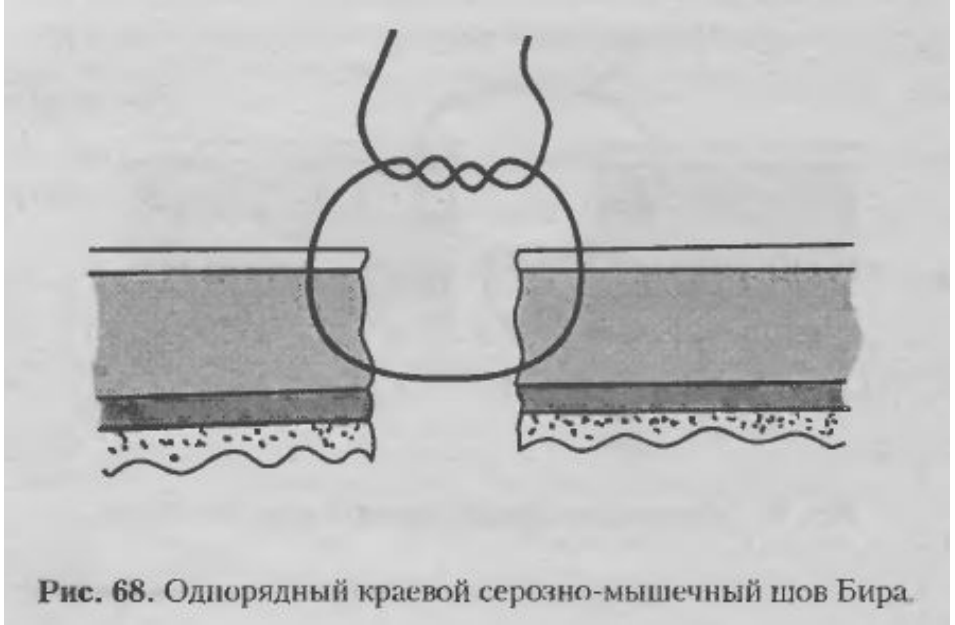


Рис. 68. Однорядный краевой серозно-мышечный шов Бира.

+ 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

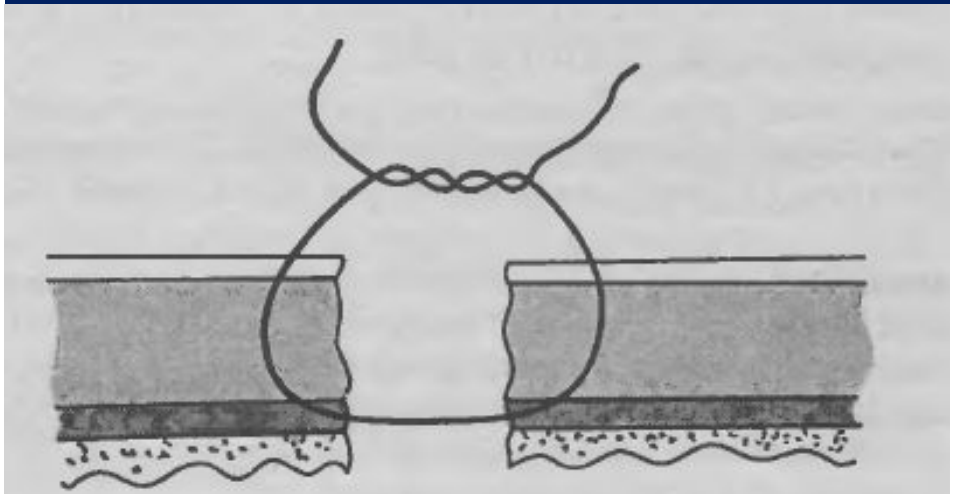


Рис. 70. Кишечный шов Пирогова.

+ 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

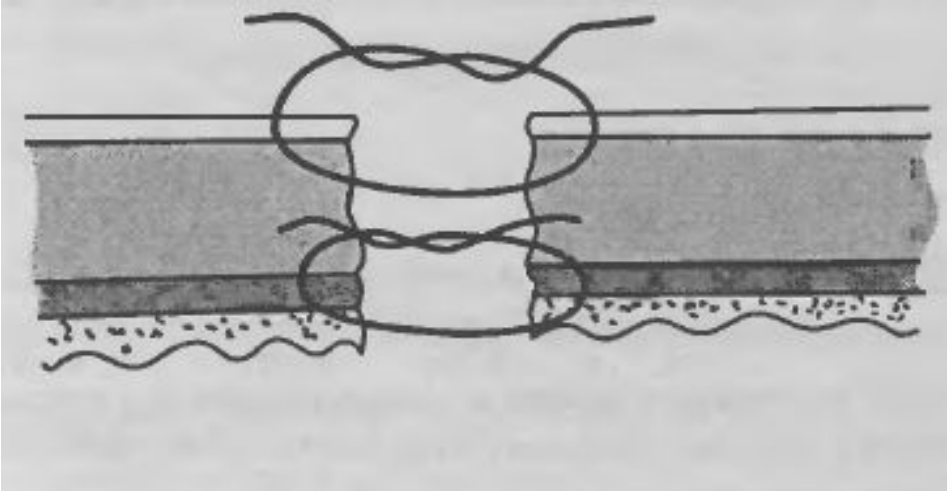


Рис. 71. Кишечный шов Кирпатовского.

+ 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

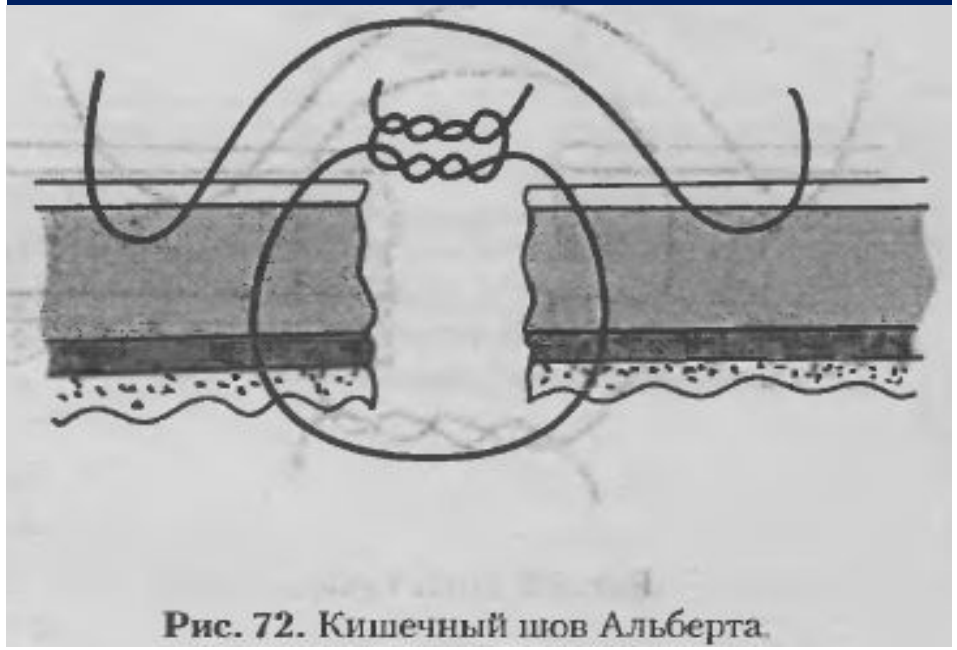


Рис. 72. Кишечный шов Альберта.

+ 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

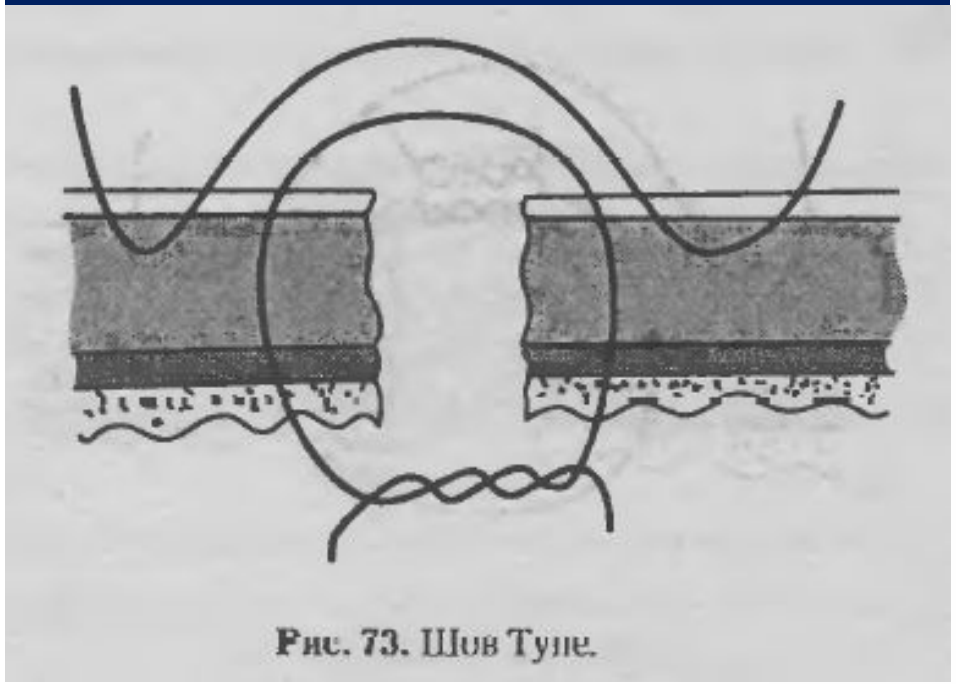


Рис. 73. Шов Туне.

- More complex version of Albert suture.

Double row combined inverting Schmiden suture

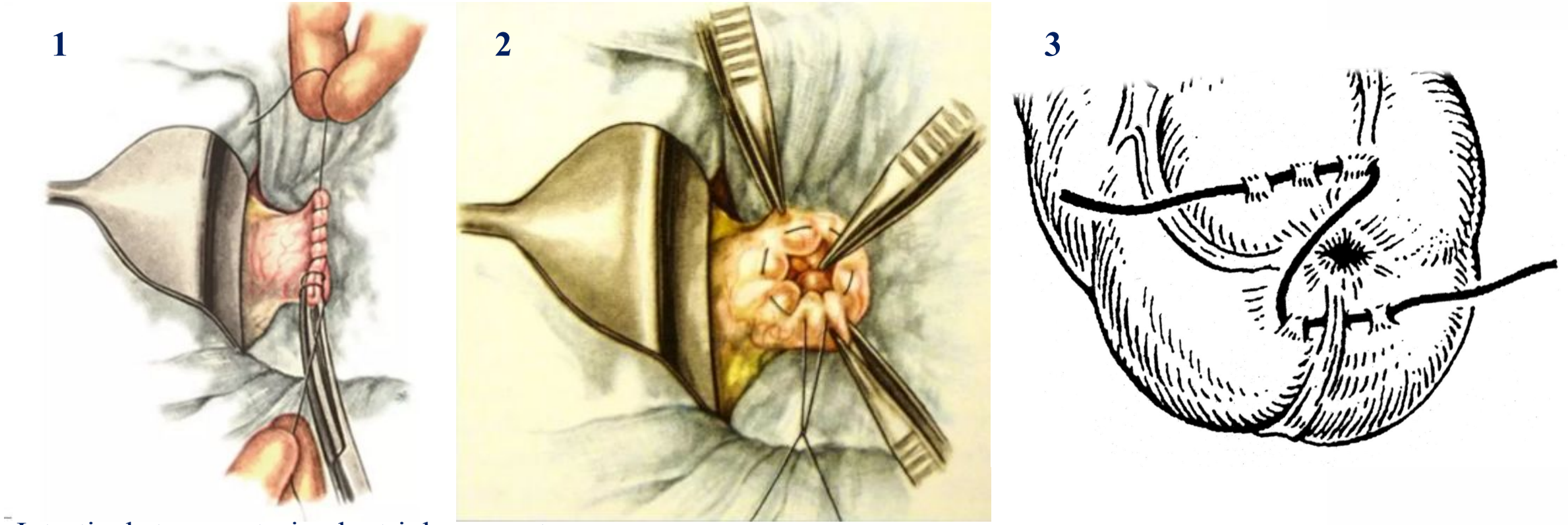
Рис. 74. Шов Шмидена.

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

5. Triple row sutures

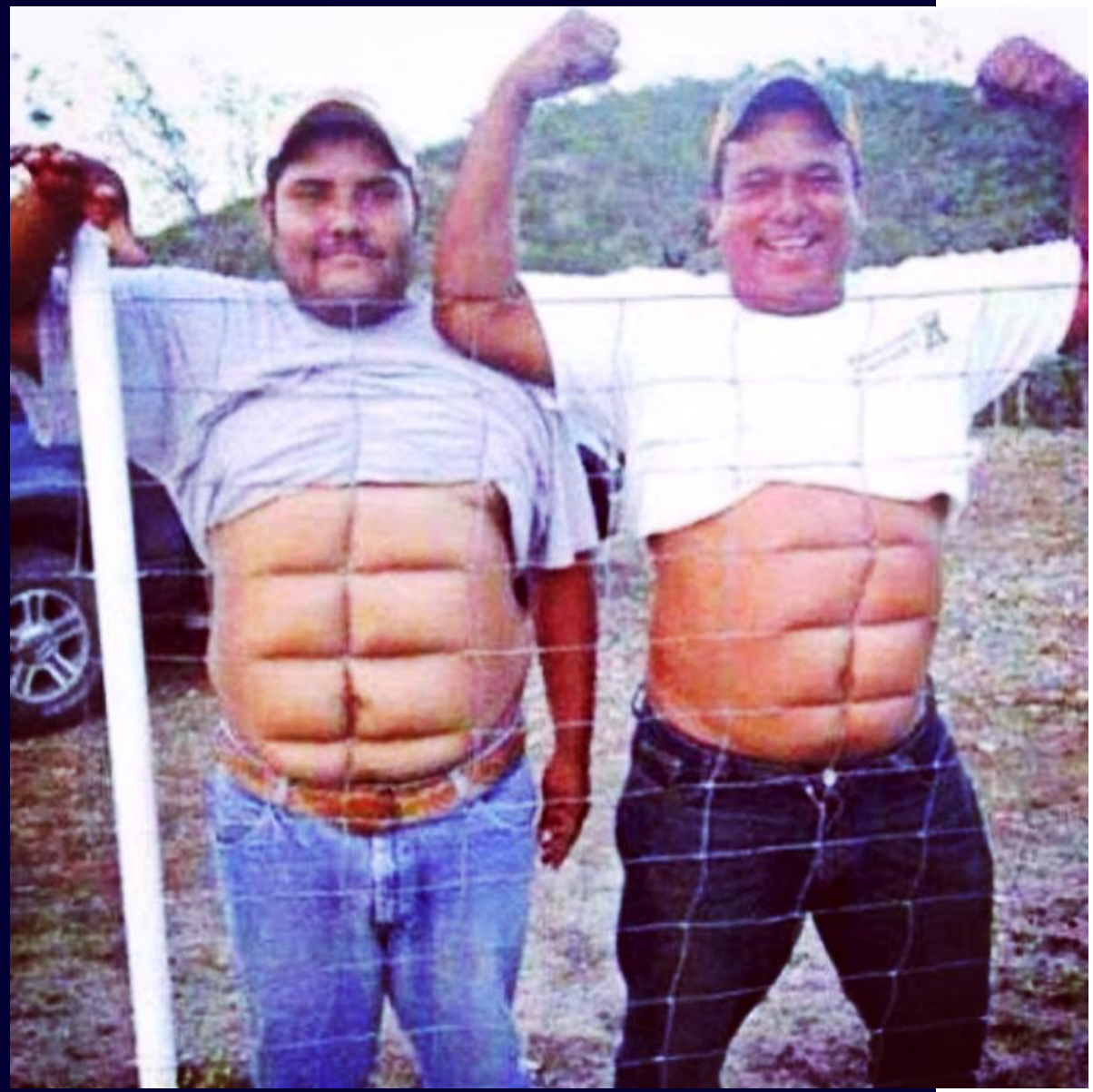
Versions:

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;



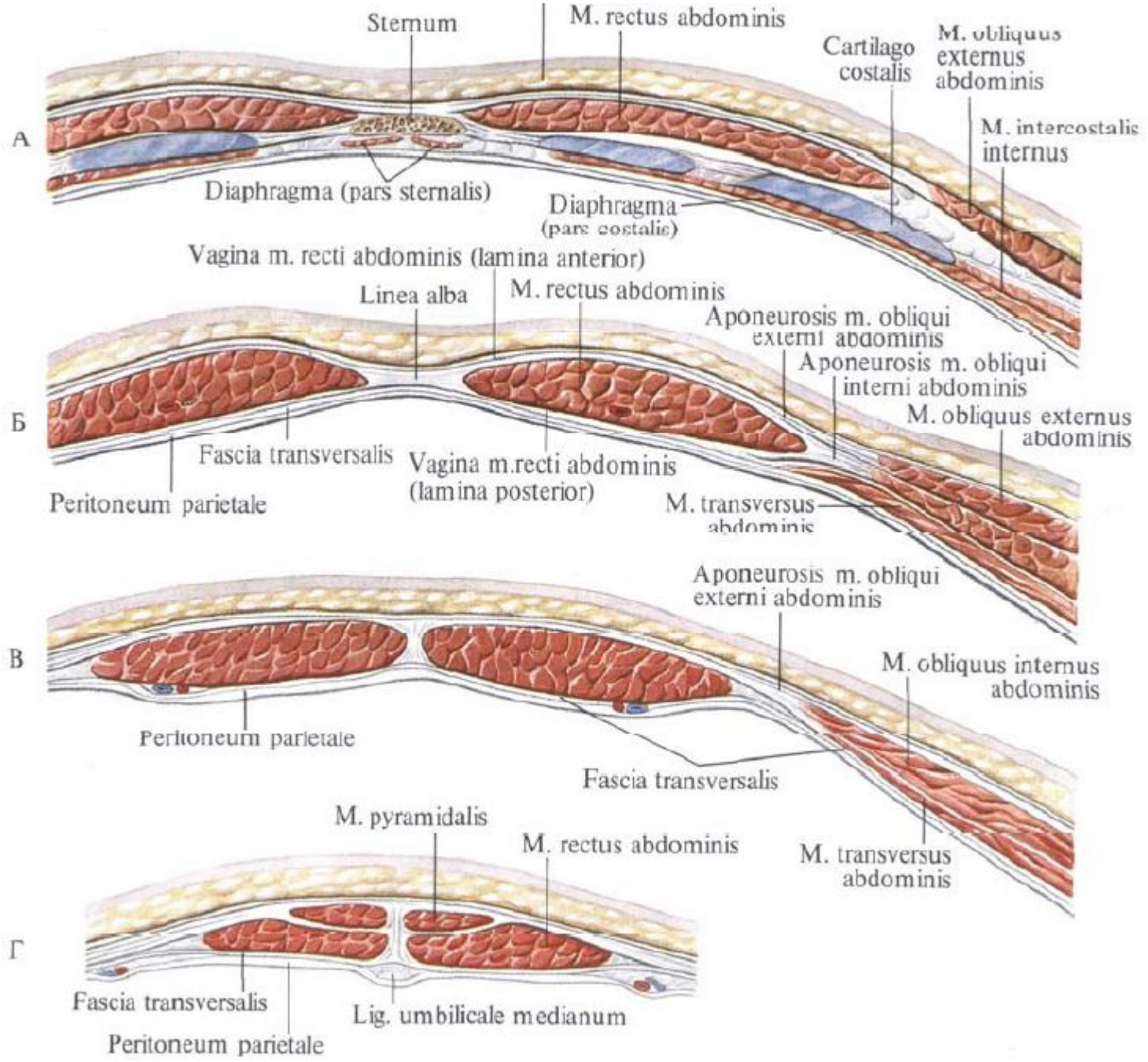
Intestinal stump suturing by triple row suture.
1 – Continuous wrapping through-and-through suture;
2 – planar simple purse string serous-muscular suture;
3 – Z-shaped planar purse string serous-muscular suture.

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.




Thanks for your attention :3