

Institute of Surgical Research

Surgical techniques – „A3” Practical Module.

A1. MODUL - Asepsis and the surgeon

A2. MODUL – Surgical instrumentation

A3. MODUL – Operations

Surgical knotting,

Knotting under tension, knotting in cavities

Tissue approximation, suture types

A4. MODUL – Operations, bleedings

A5. MODUL - Wound

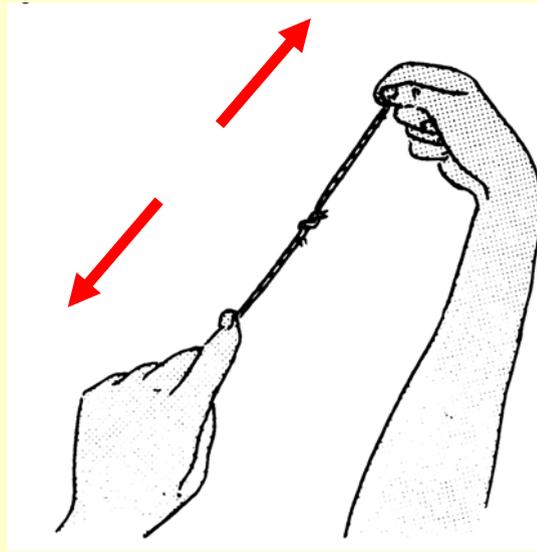
A6. MODUL – Minor surgical procedures



Knotting - revision

Principles of knotting on the surface of body:

- **To bring structures together without constricting the tissue.**
 - join structures (tighten the first half hitch just sufficiently to oppose the tissues).
 - the next hitches are tightened snugly to the previous ones.
- **The direction of pull on the threads must be along a straight line which passes through the centre of the knot.**



Tying - under tension

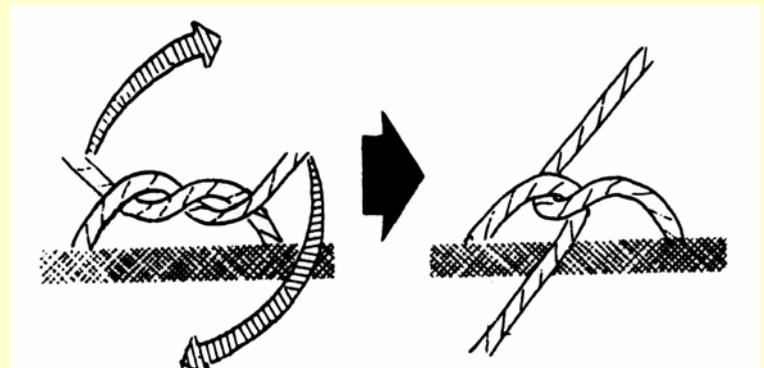
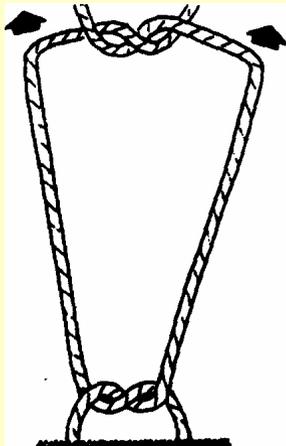
Normally we do not knot under tension.

In special cases, knots are tightened under tension to draw together two structures or to occlude bulky elastic ducts (artery, vein).

We avoid letting the first half hitch slip while forming the second by the following means (1-5):

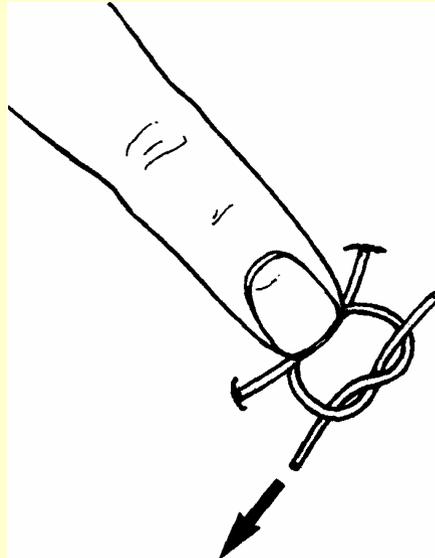
1. After tightening the first half hitch, keep a little tension on the threads while forming and tightening the second half hitch.

2. Having tightened the first half hitch, sharply rotate them to jam the first half hitch, while the second hitch is formed.

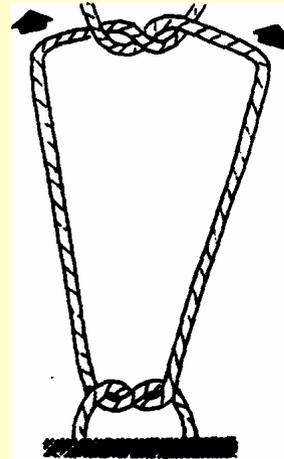
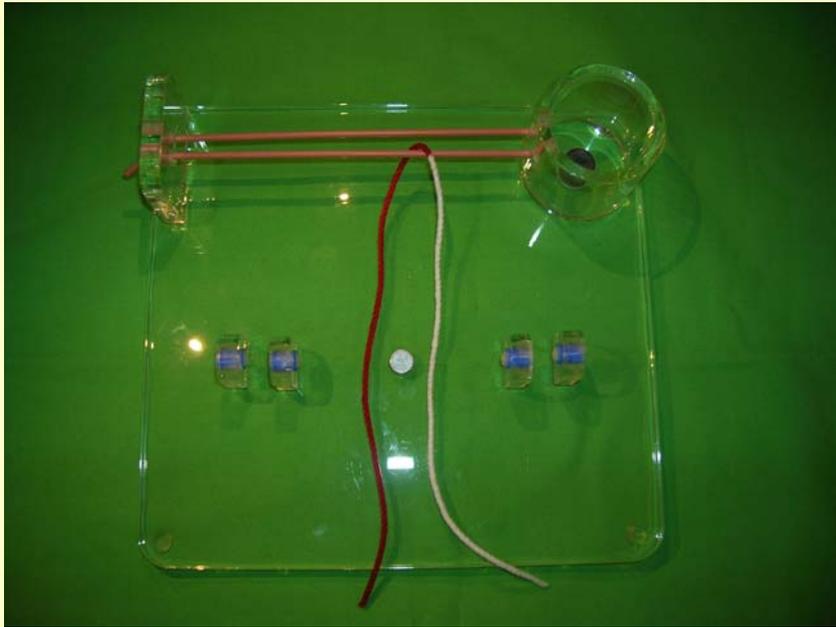


Tying - under tension

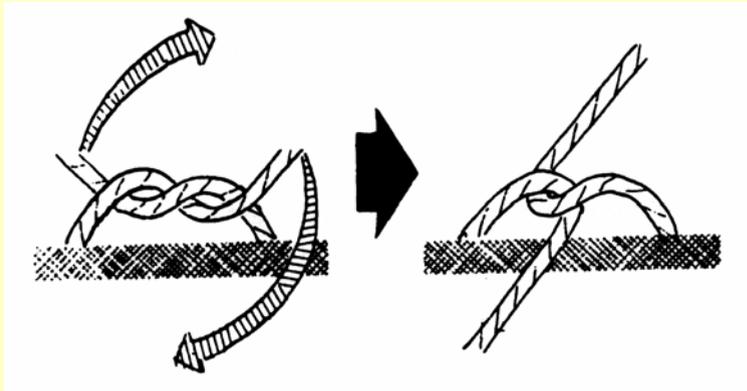
3. The assistant's finger may be pressed on the tightened first half hitch while the second hitch is formed (see Figure).
4. Surgeon's knot may be sufficient to hold the tension while the second hitch is formed and tightened.
5. The assistant can press the margins of a wound together.



Practice: Tying - under tension



After tightening the first half hitch, keep a little tension on the threads while forming and tightening the second half hitch.

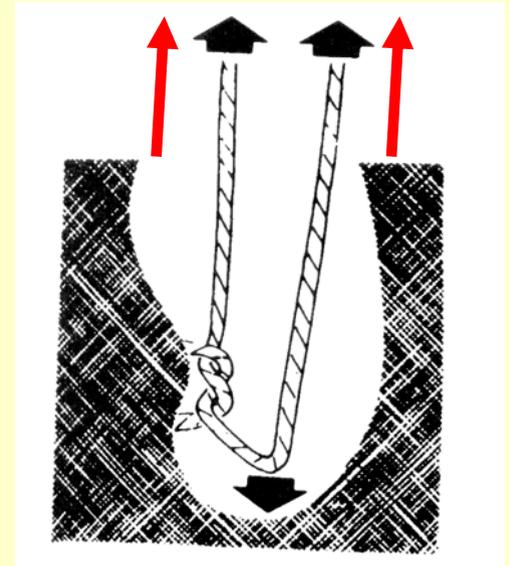
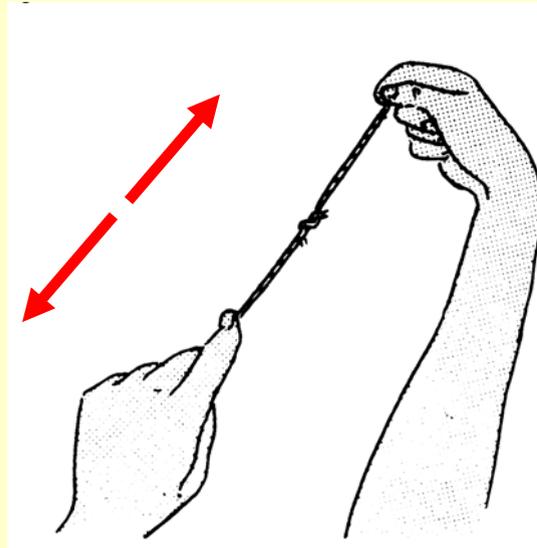


Having tightened the first half hitch, sharply rotate them to jam the first half hitch, while the second hitch is formed.

Knotting - in cavities

When pulling the threads in opposite directions in the horizontal plane is not possible.

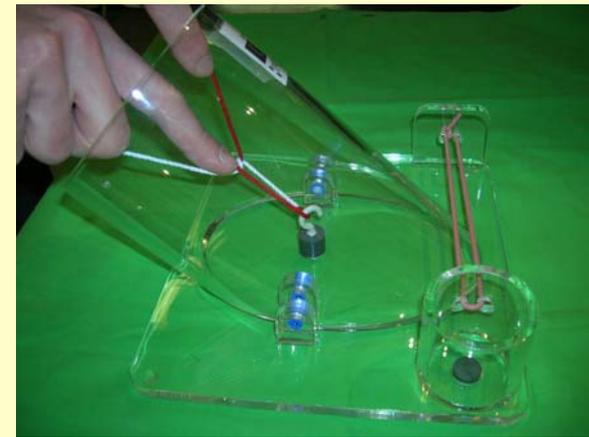
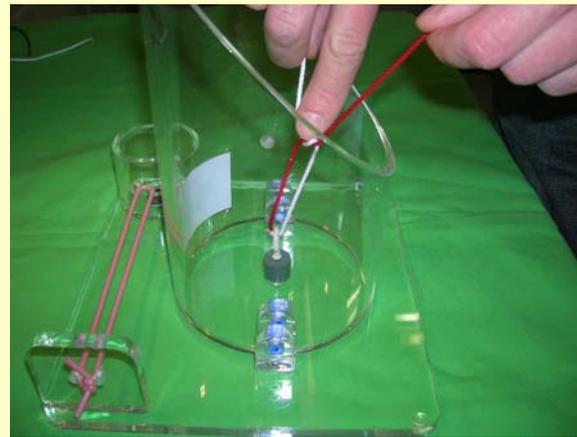
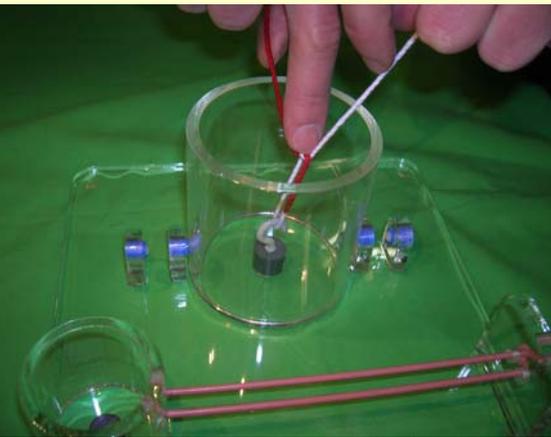
- Form the half hitch outside the mouth of the cavity and tighten this in the depths of the cavity (Figure 1).
- Push one thread deeper into the cavity while pulling the other thread towards the surface (Figure 2).



PRACTICE

Knotting - in cavities

1. Practicing of square, surgical and Vieneese knots
2. Knotting with instruments



3. Knotting in the depths

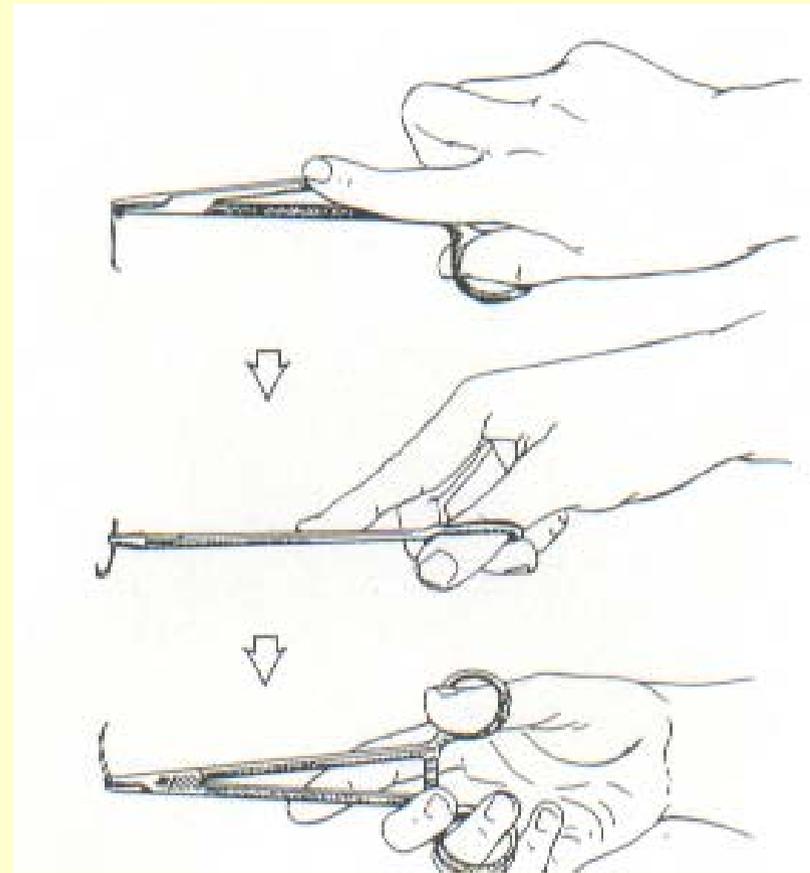
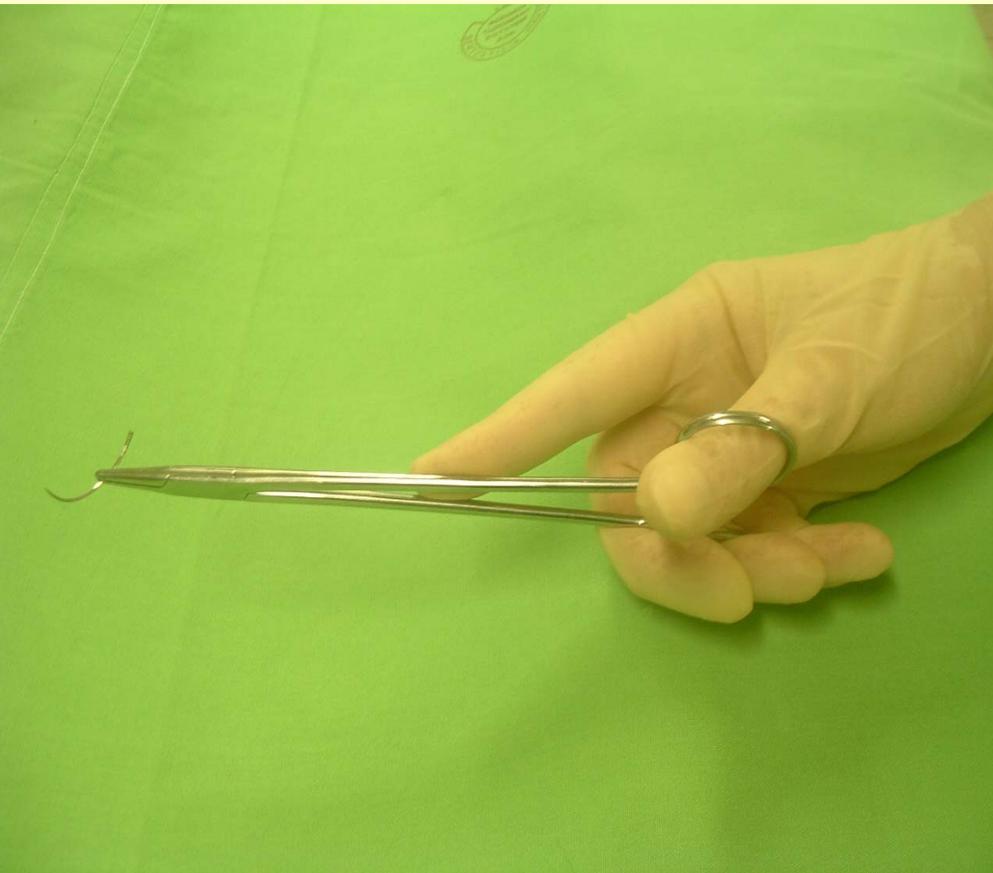
4. Knotting in the abdomen

5. Knotting in the lesser pelvis

The half hitch is formed outside instead of being tied in the depths

2. Practice of suturing techniques

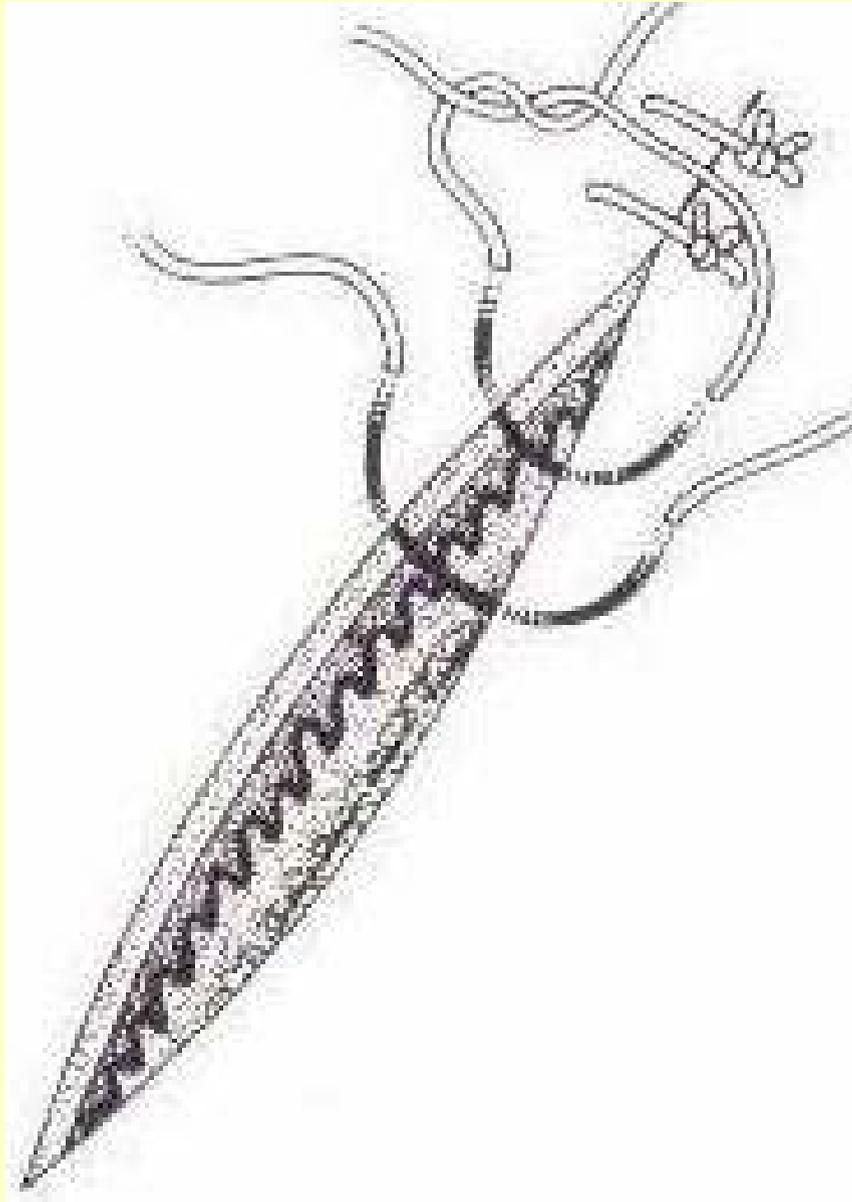
Position of the needle holder



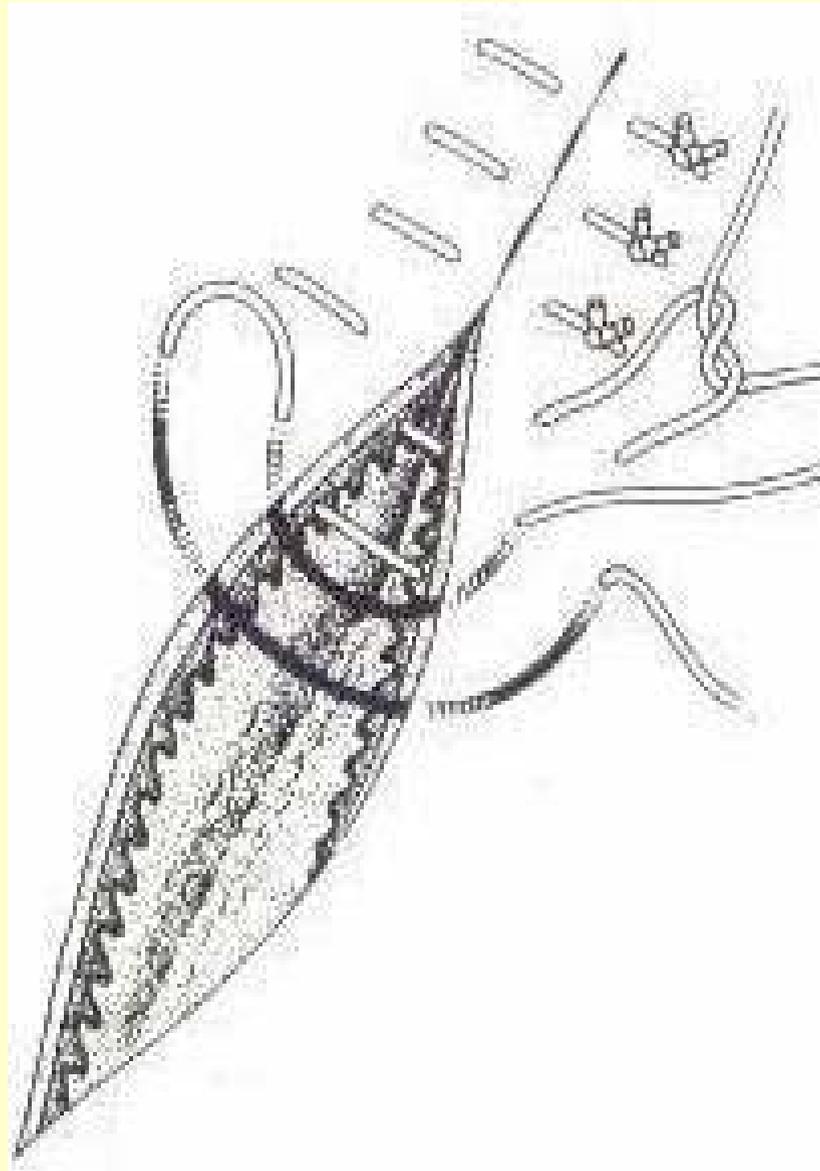
Mounting a needle holder and threading a needle



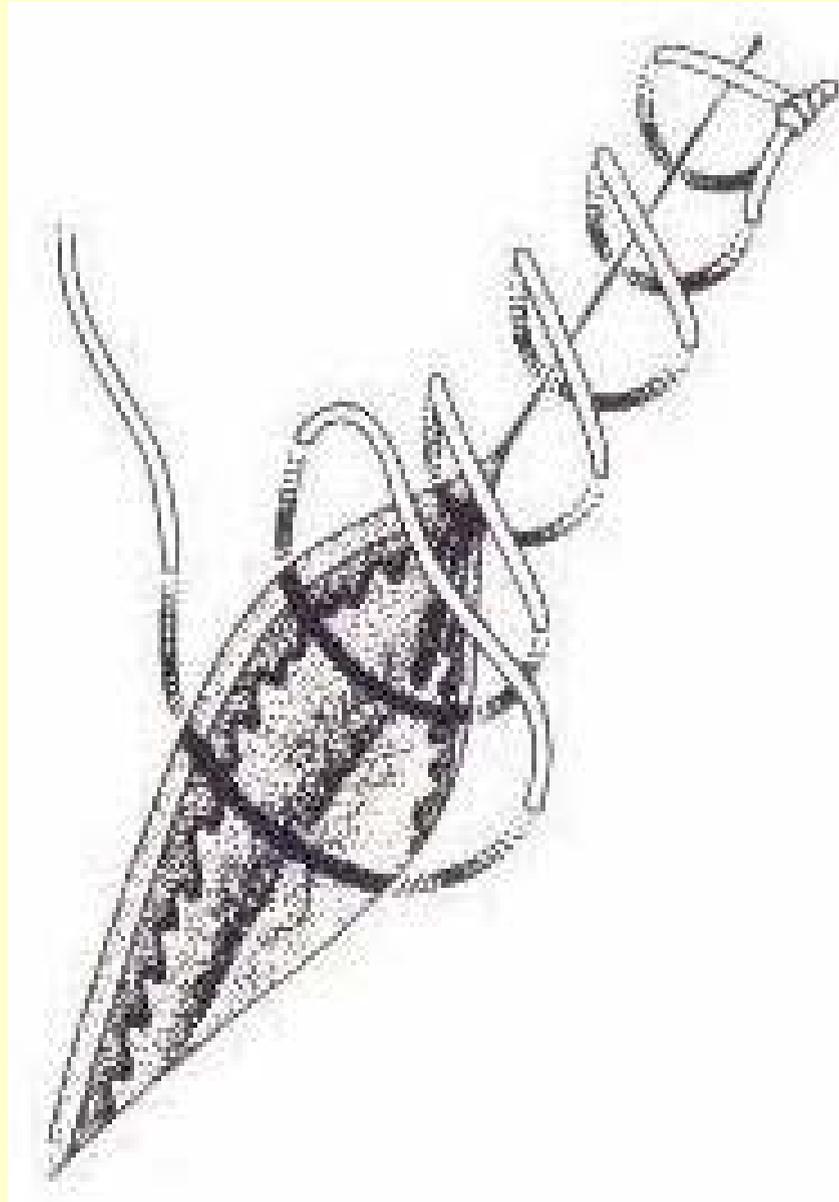
Interrupted: simple suture



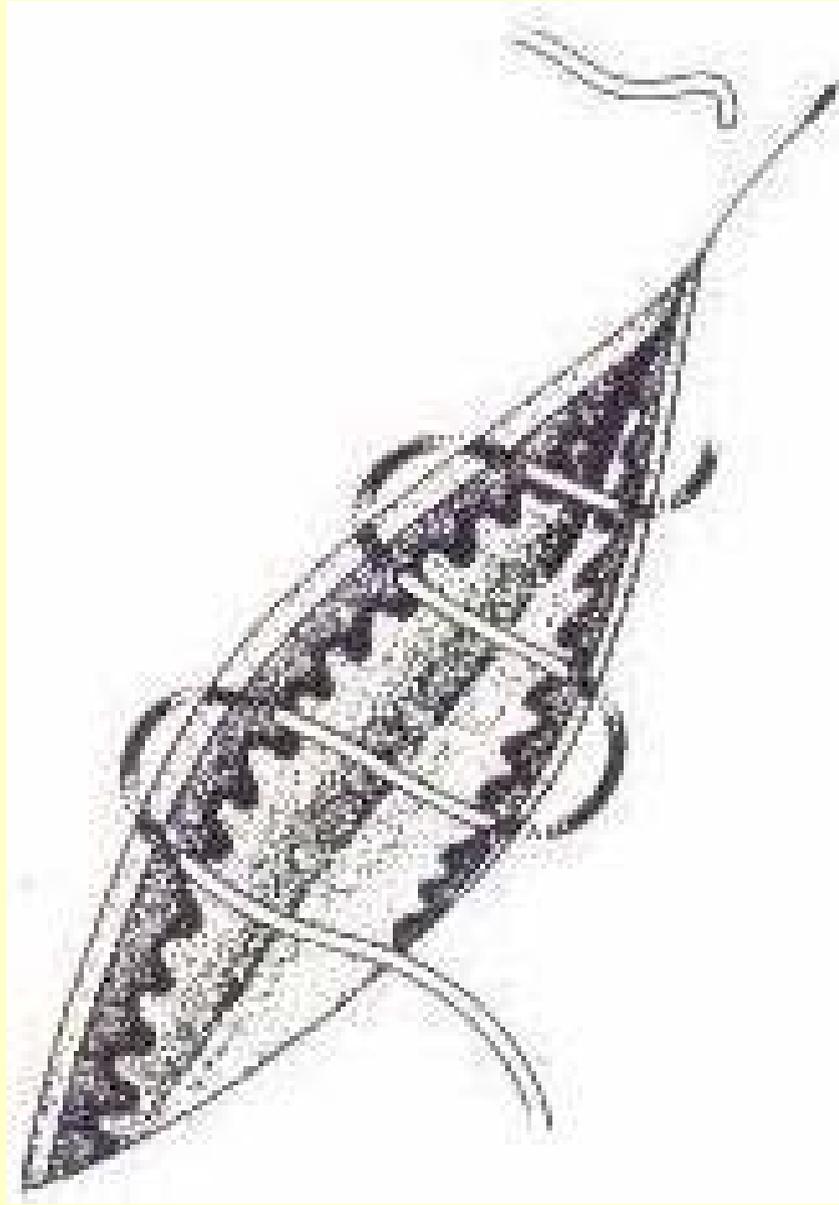
Interrupted: vertical mattress suture



Continuous: simple suture



Continuous: intracutan (subcuticular) suture



Schedule

Idő (perc)	0-15	15-50	50-75	75-90
	Introduction	Knotting in depths and under tension	Suture Tutor: Suture types	Suture Tutor: Suture types
		Suture Tutor: Suture types	Knotting in depths and under tension	Suture Tutor: Suture types
		Suture Tutor: Suture types	Suture Tutor: Suture types	Knotting in depths and under tension