

JET 2016

2/19 Fri. Hilton Fukuoka

Cardiologists, Cardiovascular surgeons, Nephrologists, Radiologists,
Urologists thoughts on shunt PTA.

Session 2

The current status of Percutaneous Surgical AVF Creation in Japan
-The Current status AVF construction in Japan-
本邦における外科的AVF作製の現状

Ikeda vascular access, dialysis and internal medicine clinic

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COI Disclosure; Name, MD.

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AVF(arteriovenous fistula)

【Characterstics】

- #1 Is used on about 90 percent of Japan's hemodialysis patients.
- #2 Preparation is easy.
- #3 Possible to be performed on almost all patients.

(Special feature of forearm AVF)

- #1 Can preserve more of the vein for future AVF.
- #2 Complications are few.
- #3 Excellent patency rate.
- #4 Puncture area is expanded.
- #5 Possible reconstruction when blockage occurs.

AVF and AVG Comparison in JAPAN

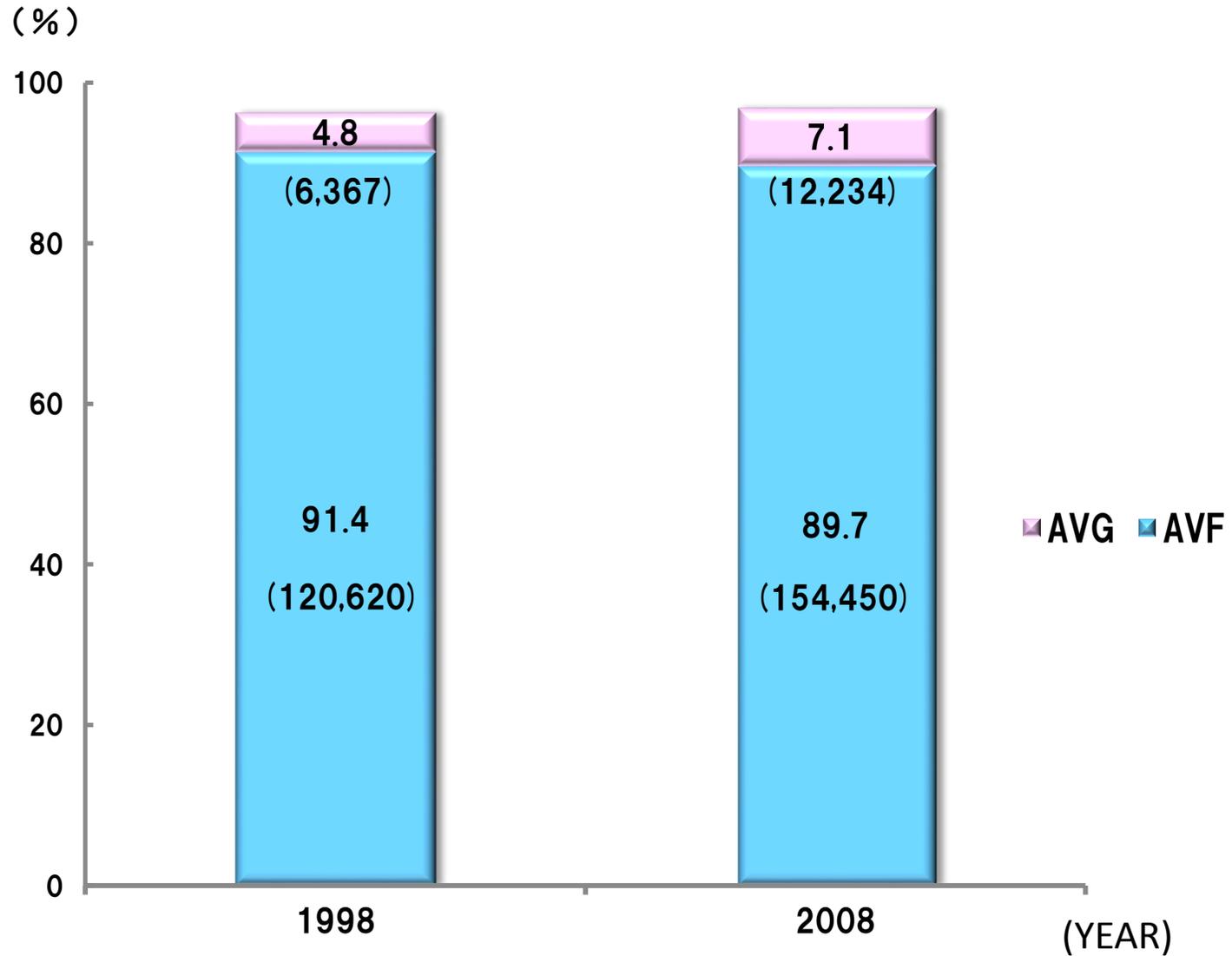
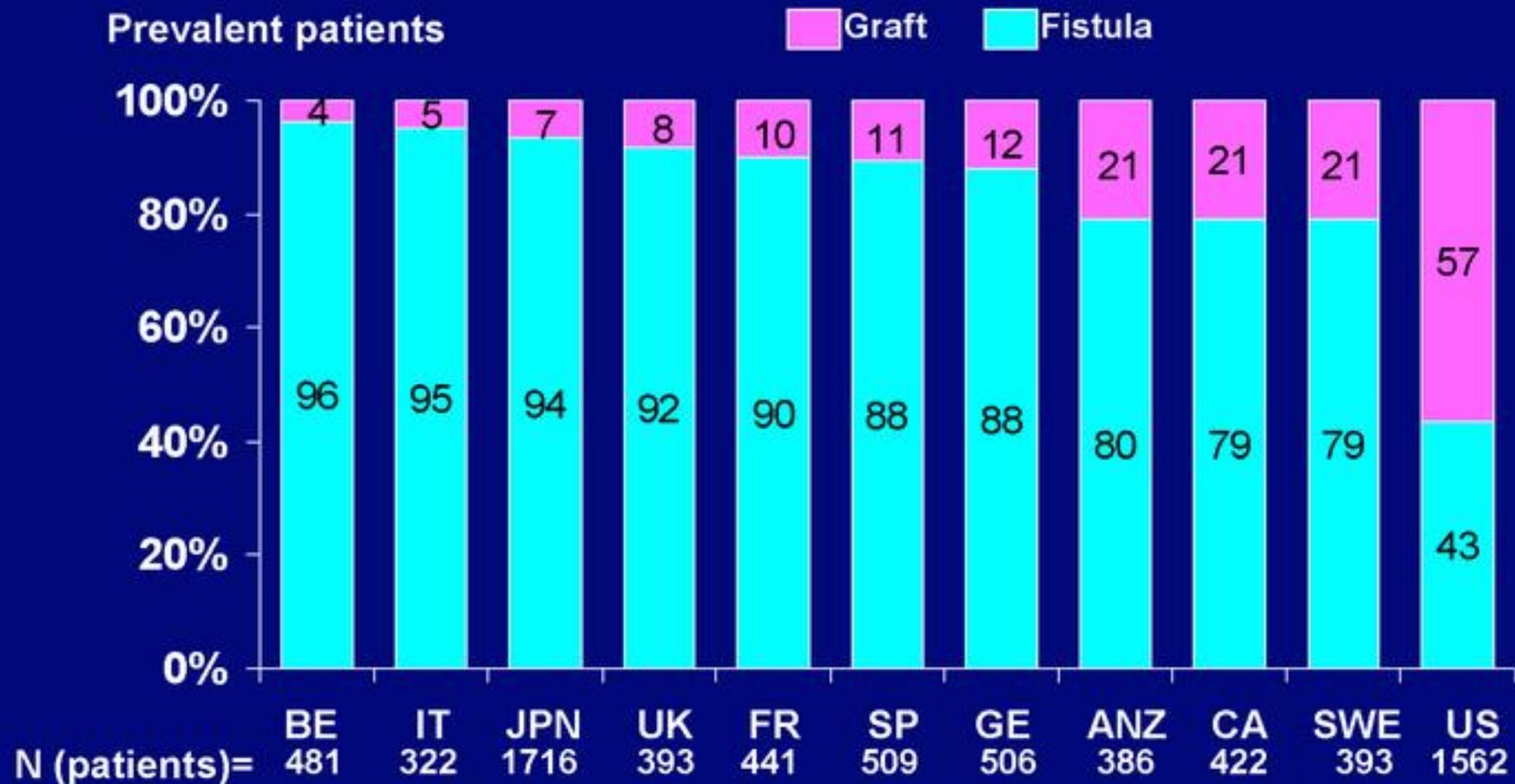


Figure 1a. Variation across countries in permanent vascular access use in a prevalent cross-section of hemodialysis patients



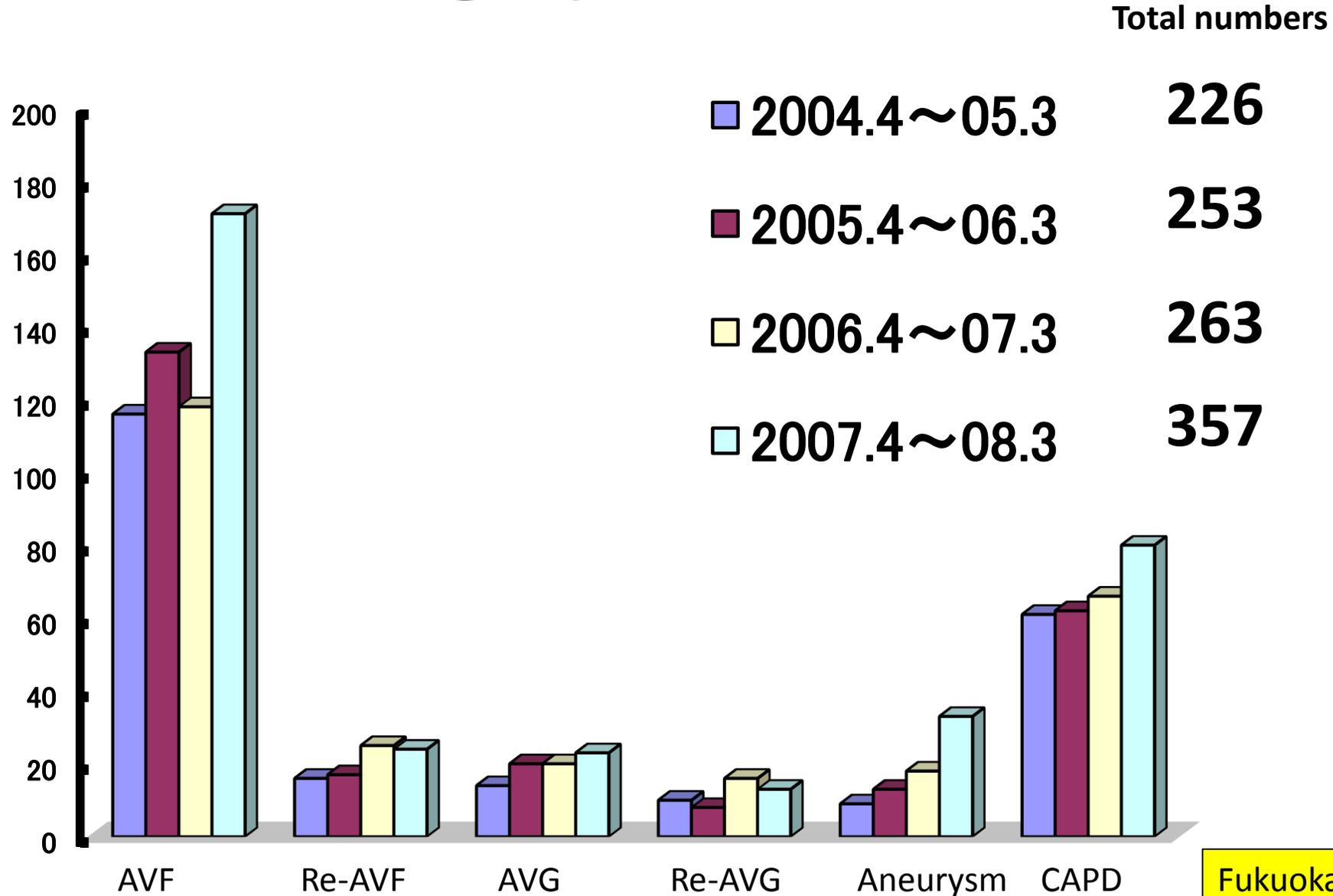
Conclusions

- Among the 12 DOPPS countries, the number of accesses created during training is lowest in the United States
- Surgical training is key to both fistula placement and survival, yet U.S. surgical programs appear to place less emphasis on fistula creation than those in other countries
- Enhancing surgical training in fistula creation would help meet targets of the Fistula First Initiative.

Today's Topics

- #1 Japanese VA Surgeons are performing several AVF methods.
- #2 I was introduced to Parachute Technique by a cardiovascular surgeon in 2001 and after adapting a version of it for VA surgery, have been teaching it for more than 10 years.
- #3 Parachute Technique is easier to teach and the patency rate is better than the OTA technique.
- # 4 2 doctors a year were taught this technique at the dialysis hospital where I worked and I will now present the results of those efforts.

VA Surgery Clasification



Merit of parachute technique

	Parachute technique	Oota technique
Thread lines required	1	2
Time of suture	about 5min.	about 10min.
Shape	Cylindrical	Flat
Teaching	easy	moderate
Patency rate	good	depends on surgeon
Ease of VAIVT	YES	NO

Treatment before and after surgery in Hospital

Before surgery:

Discontinuation the anti-platelet agent and nasal culture.

Oral use of the antibiotic for three days (Minomycin 200mg)

Postoperative disinfection method:

Dressing is left on for 1 week before disinfection.

Removal of surgical tape after 2 weeks.

Guidance of the surgical technique in Hospital

1. Guidance of anastomosis method by senior 2 doctors

2. **Cases without surgical experience**

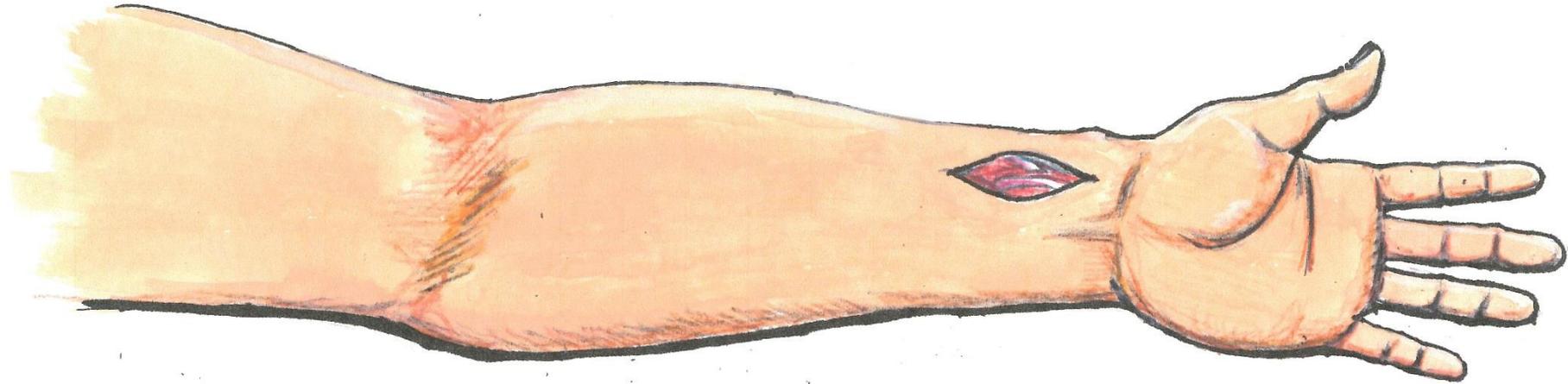
Assistant to the surgeon plus desk simulation of anastomosis method for about three months.

After 6 months doctor is allowed to perform select surgeries with senior doctor assistance.

Cases with surgical experience

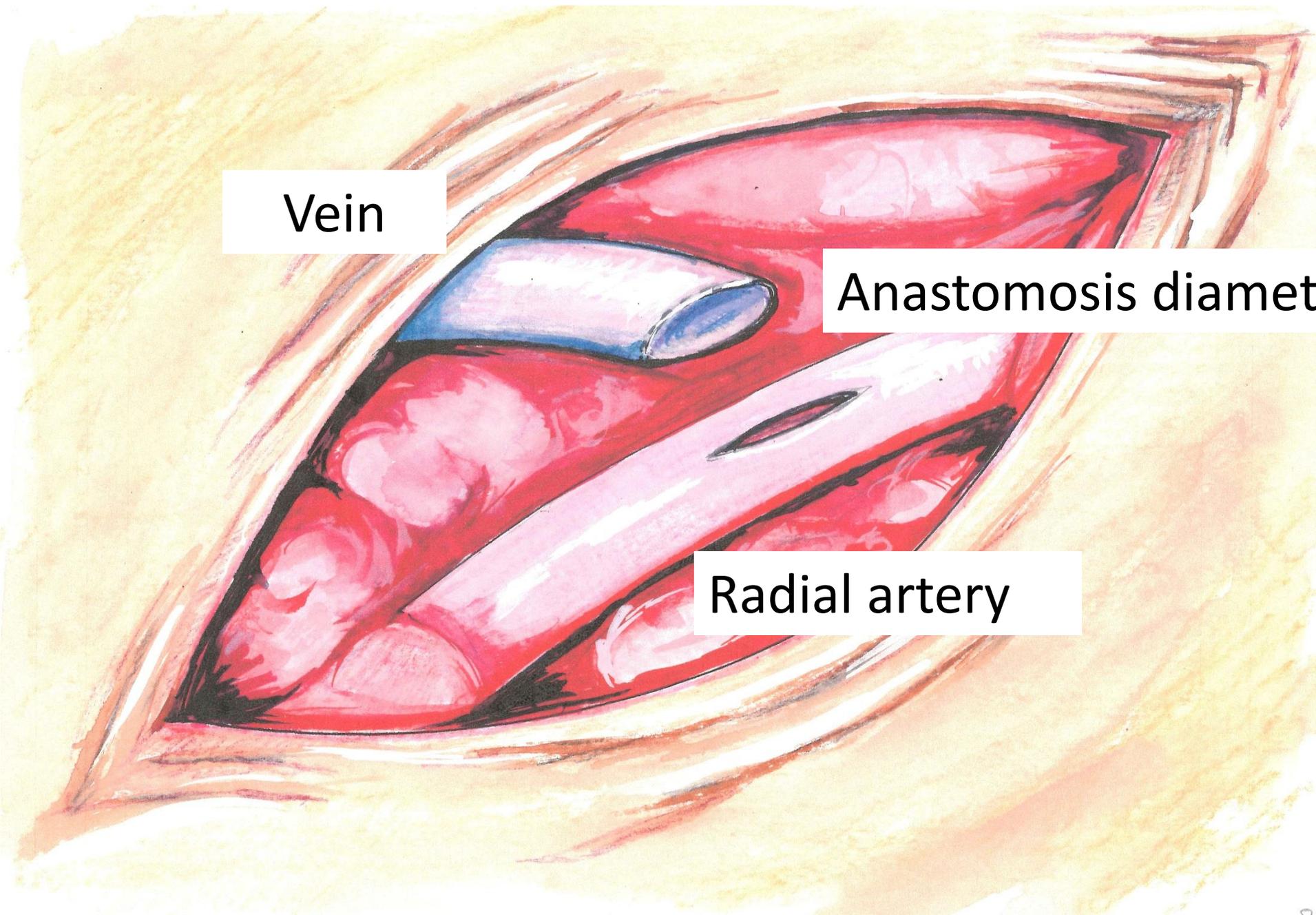
Assist in actual surgeries after desk simulation of parachute technique.

Standard AVF creation
-Parachute Technique Variation-





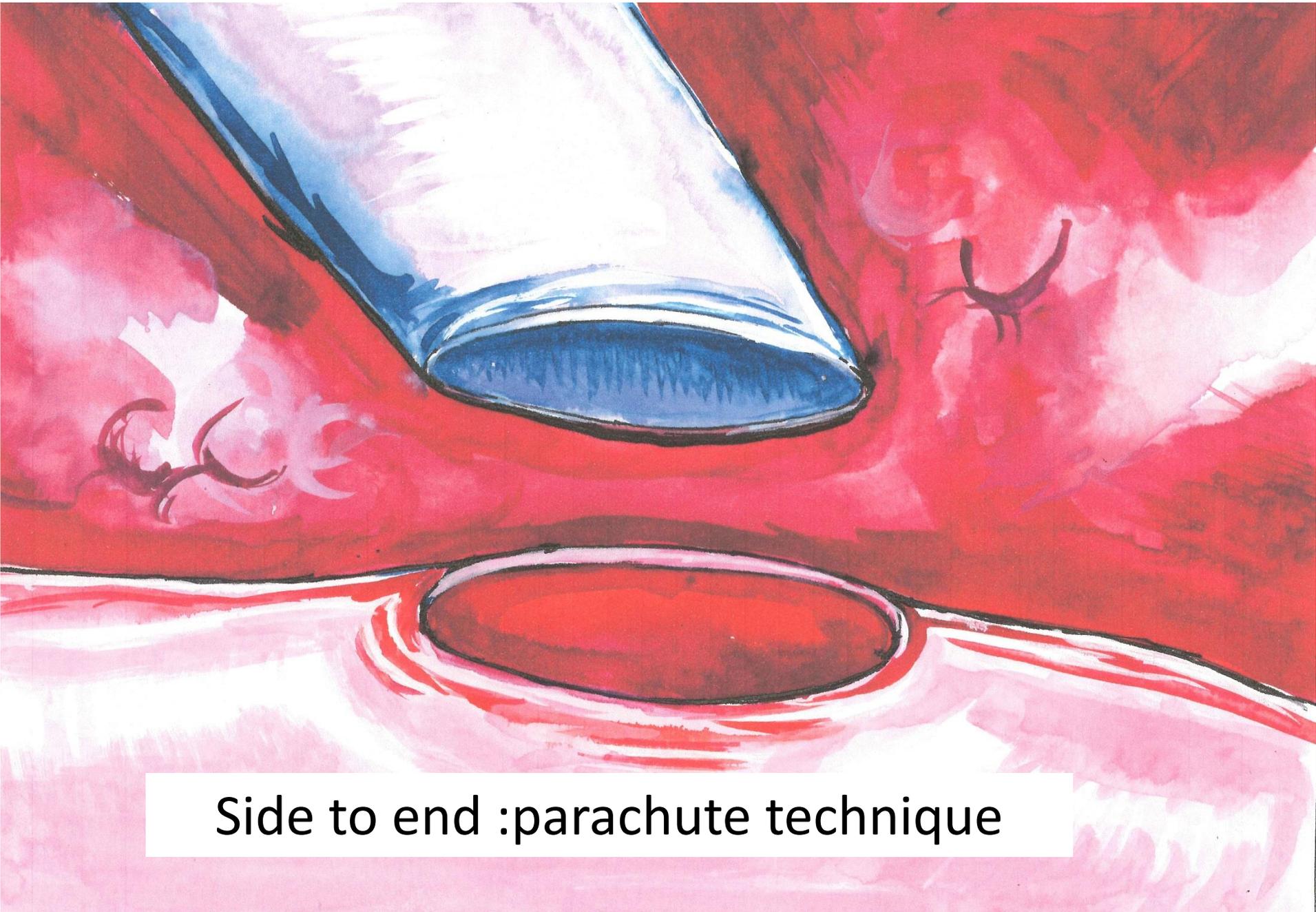
Local anesthesia using a 27G needle



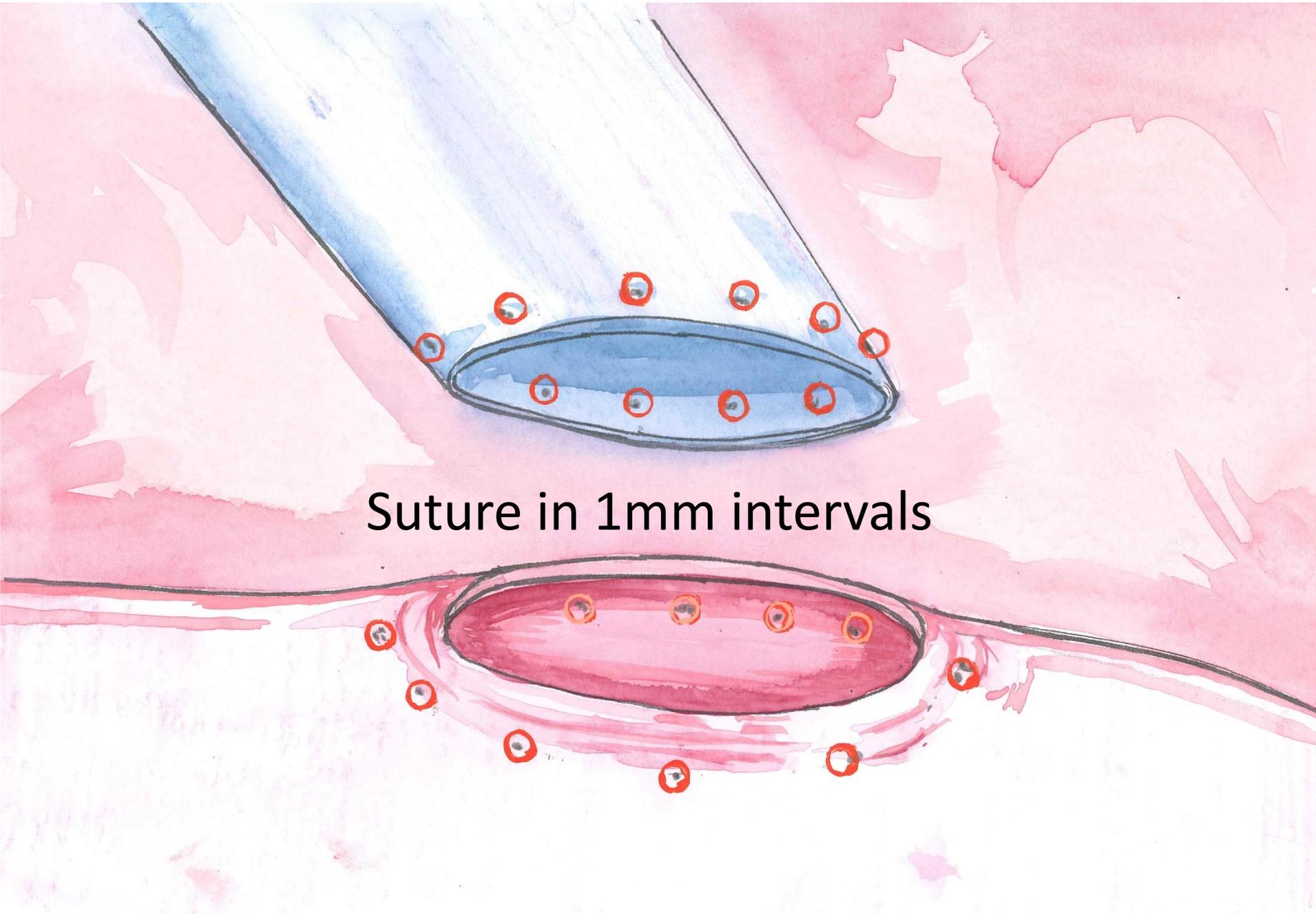
Vein

Anastomosis diameter 5mm

Radial artery



Side to end :parachute technique



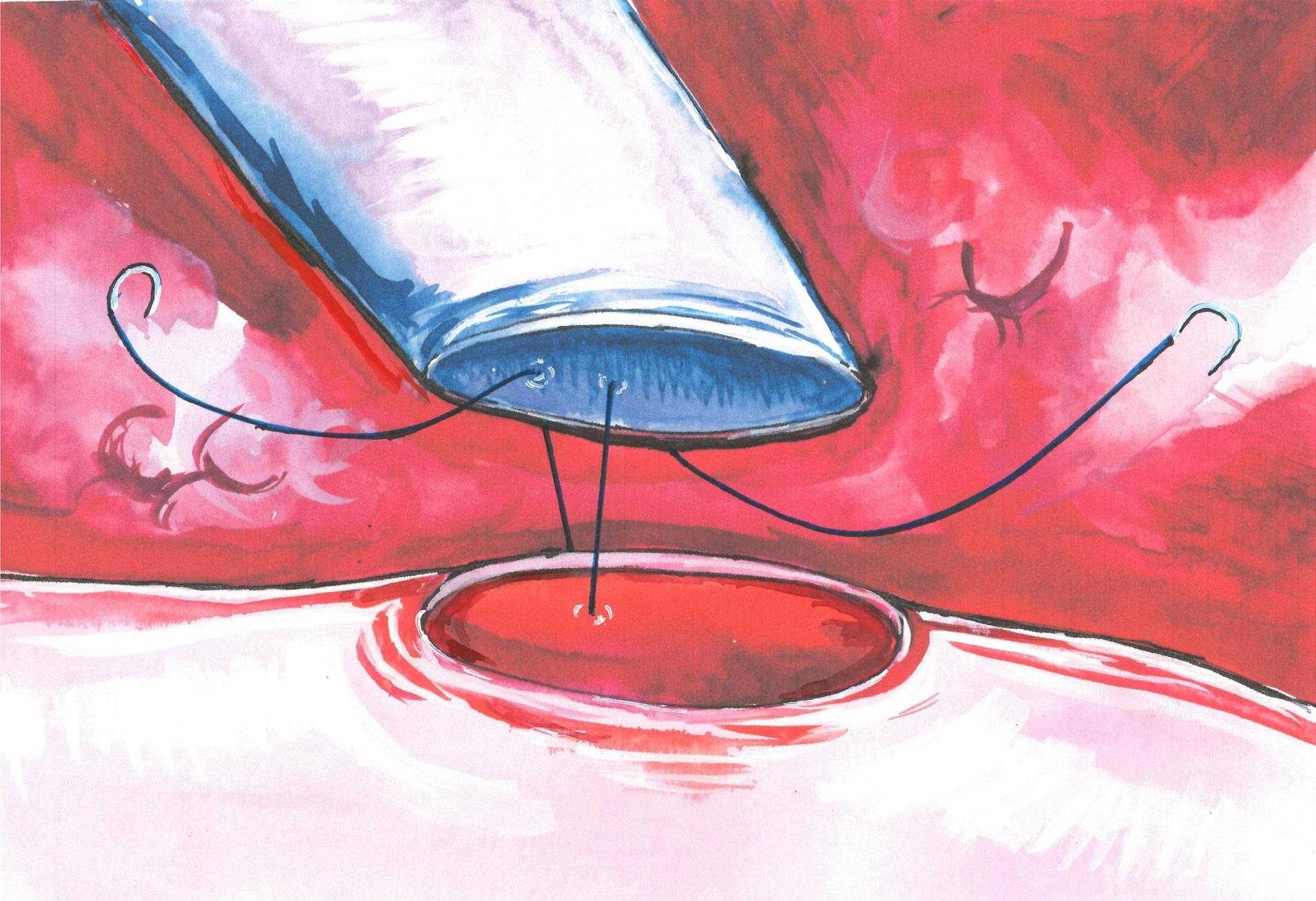
Suture in 1mm intervals

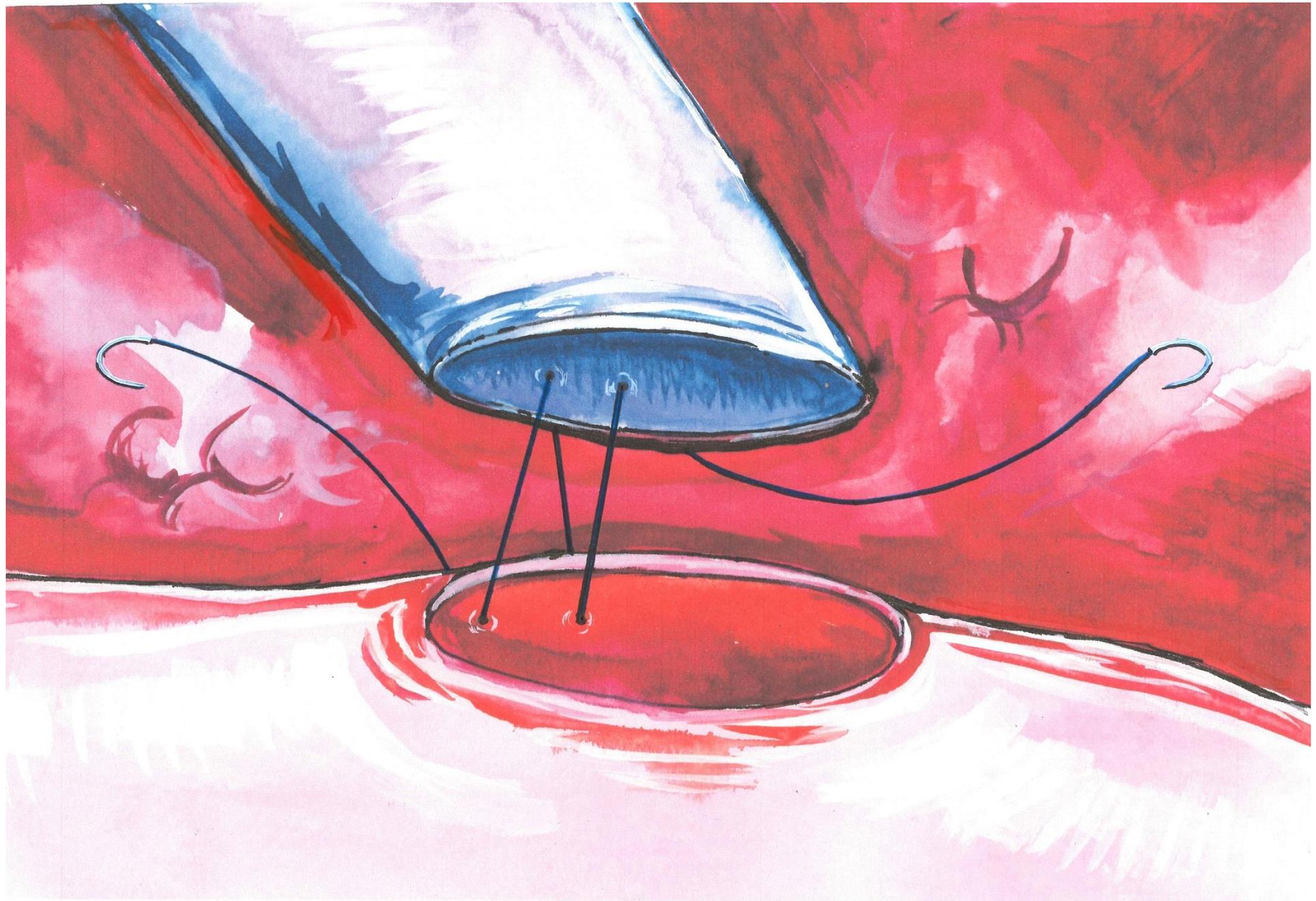


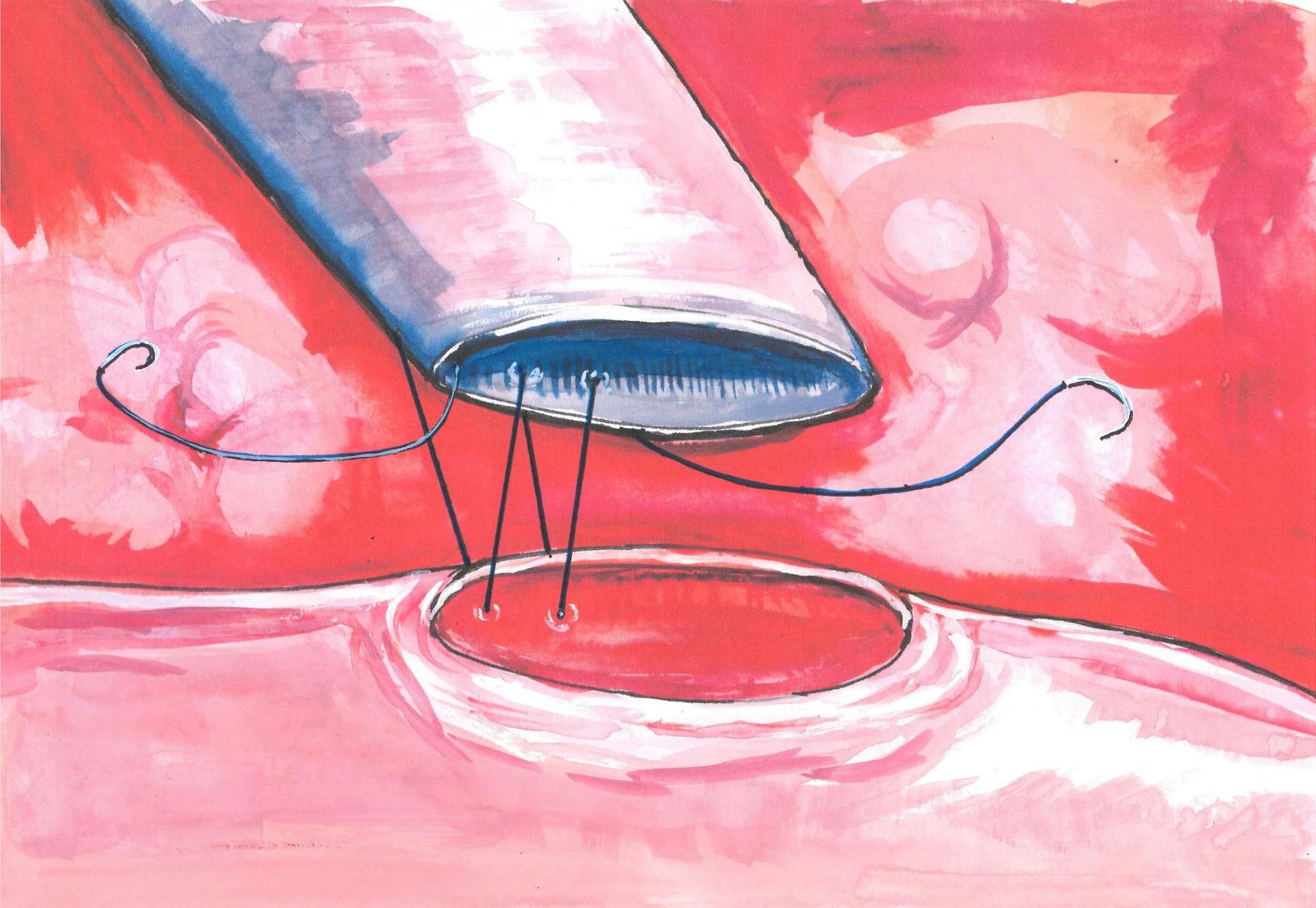
Anastomosis: put the needle from the inside close to the heel side from the 2nd stitch

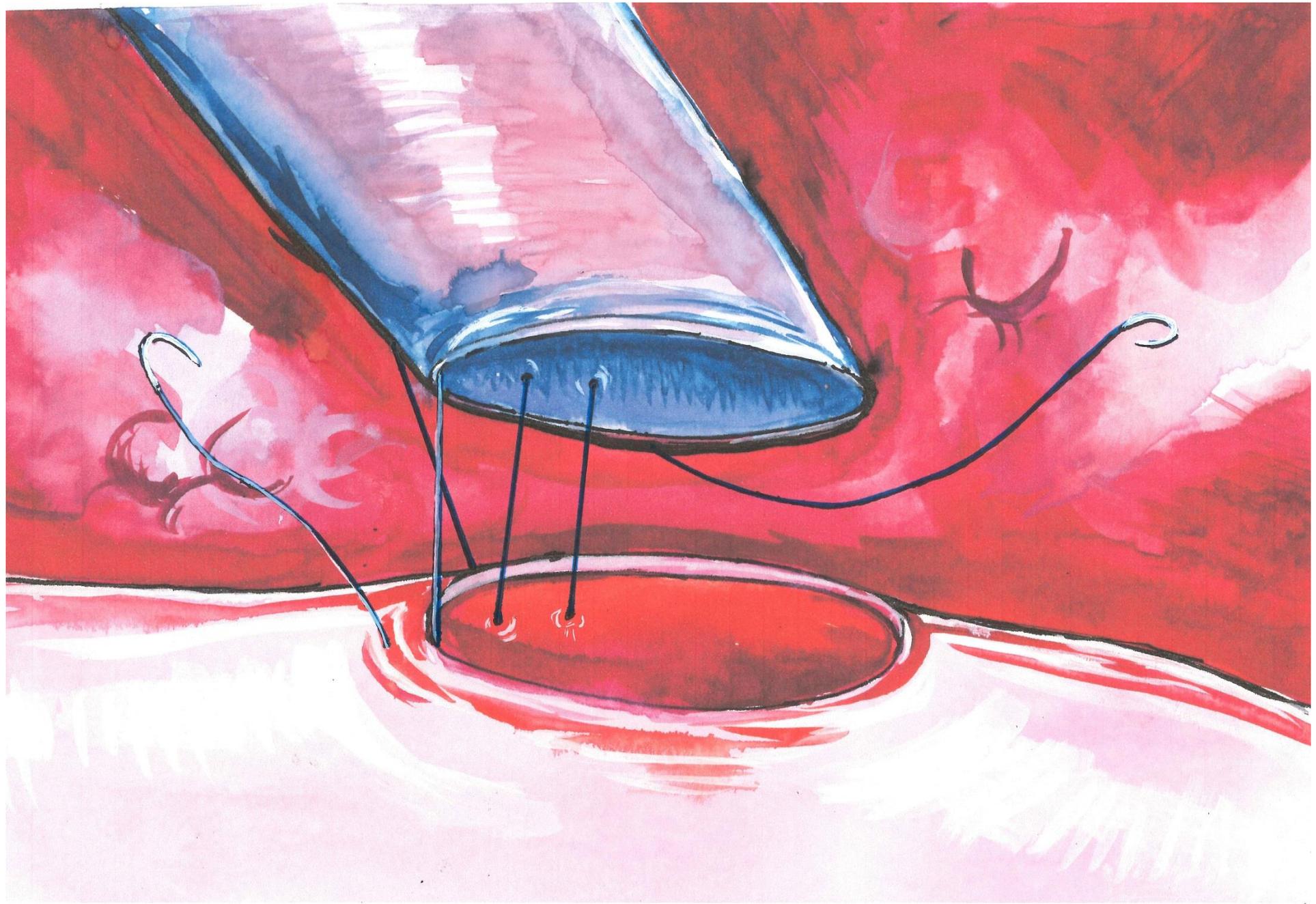


Left stitch of the double-ended needle from the inside to the outside of the artery

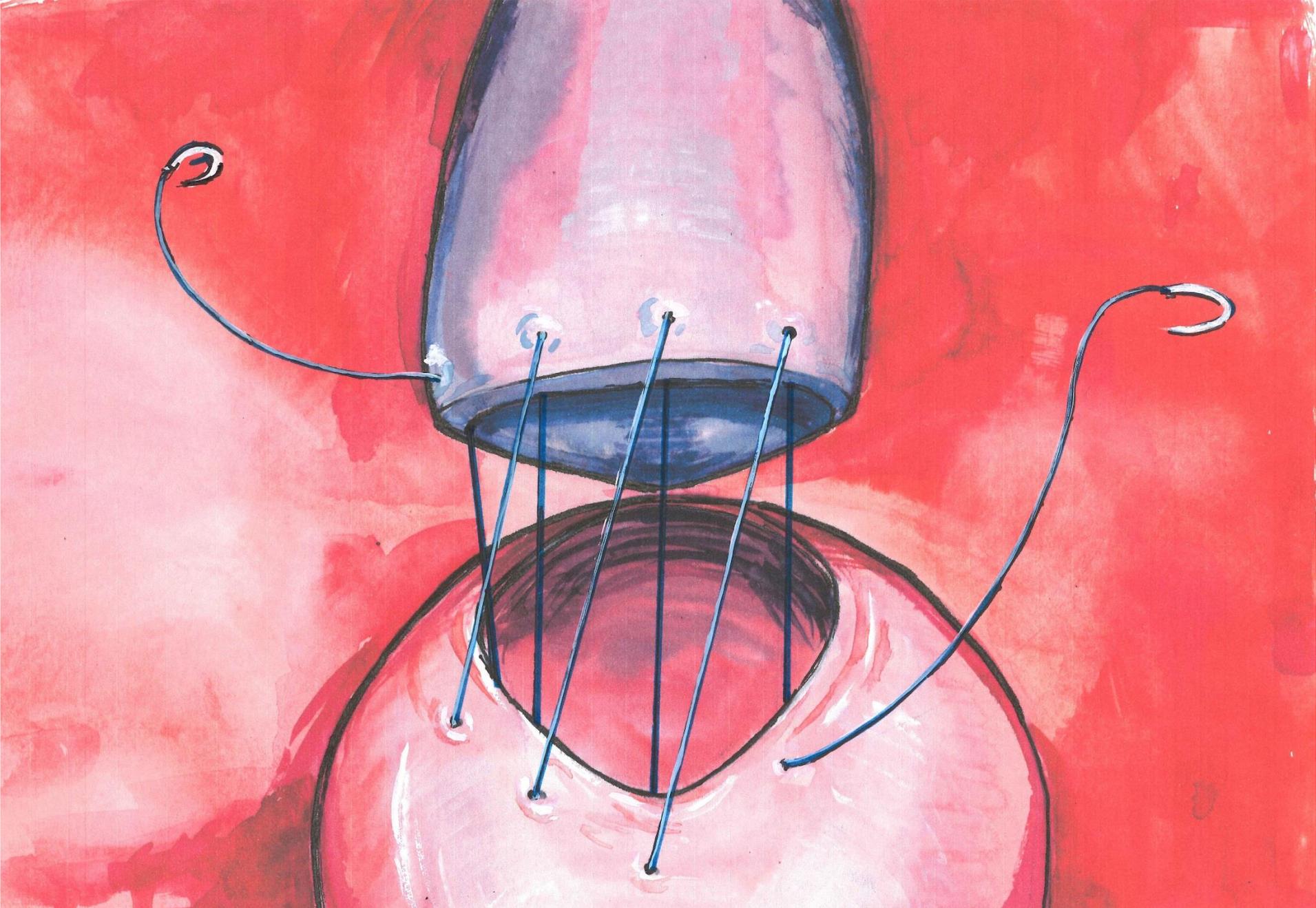


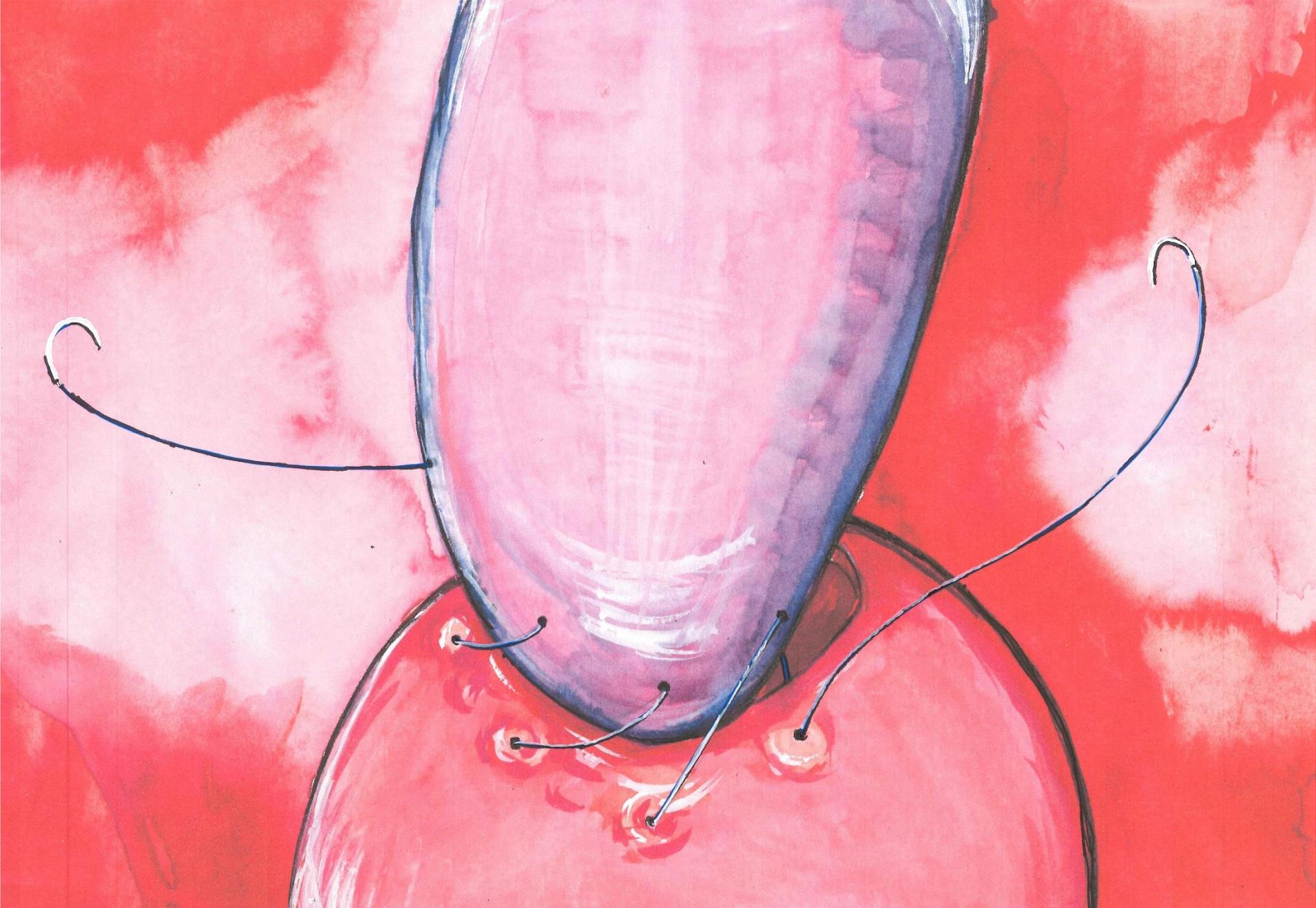


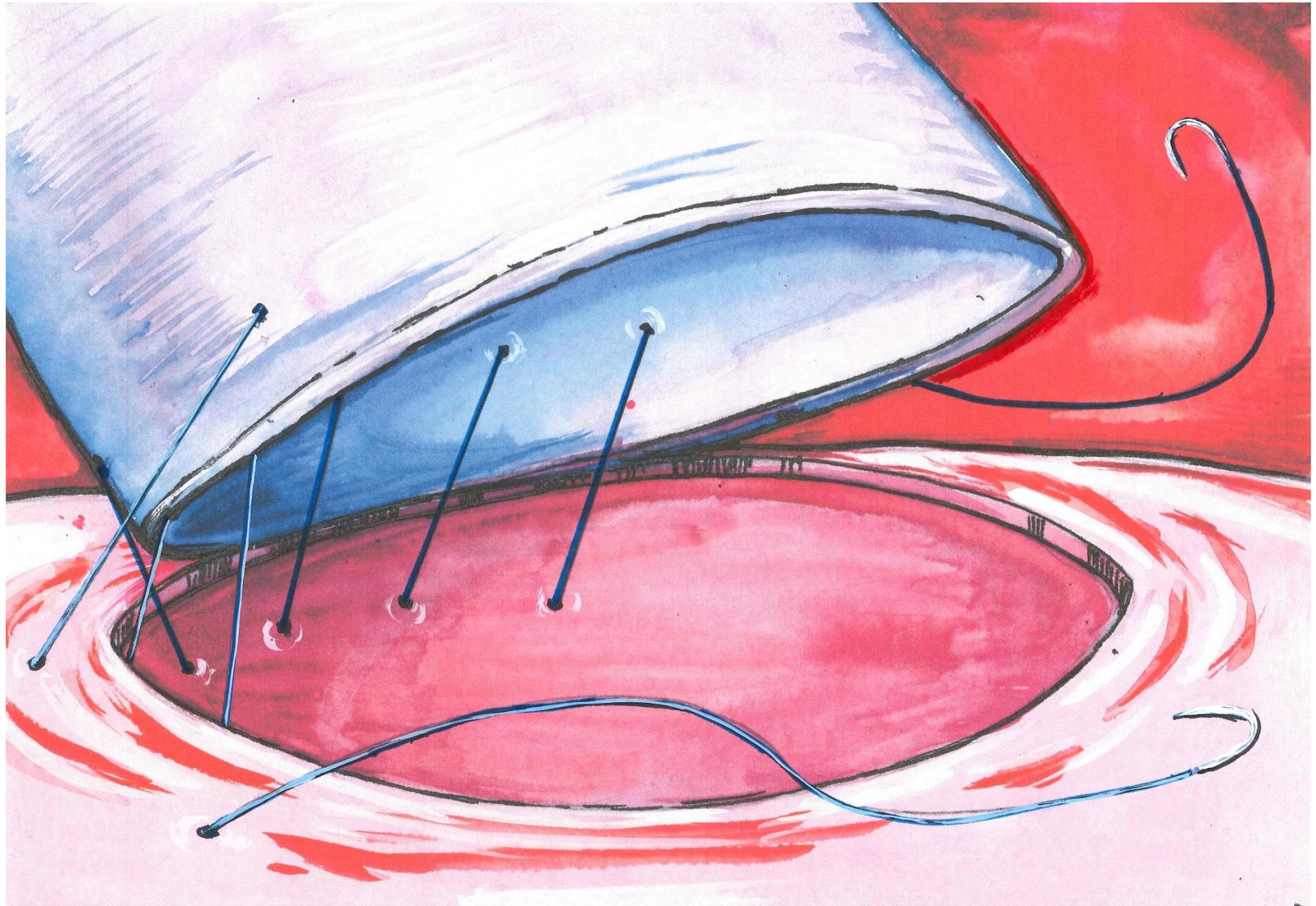


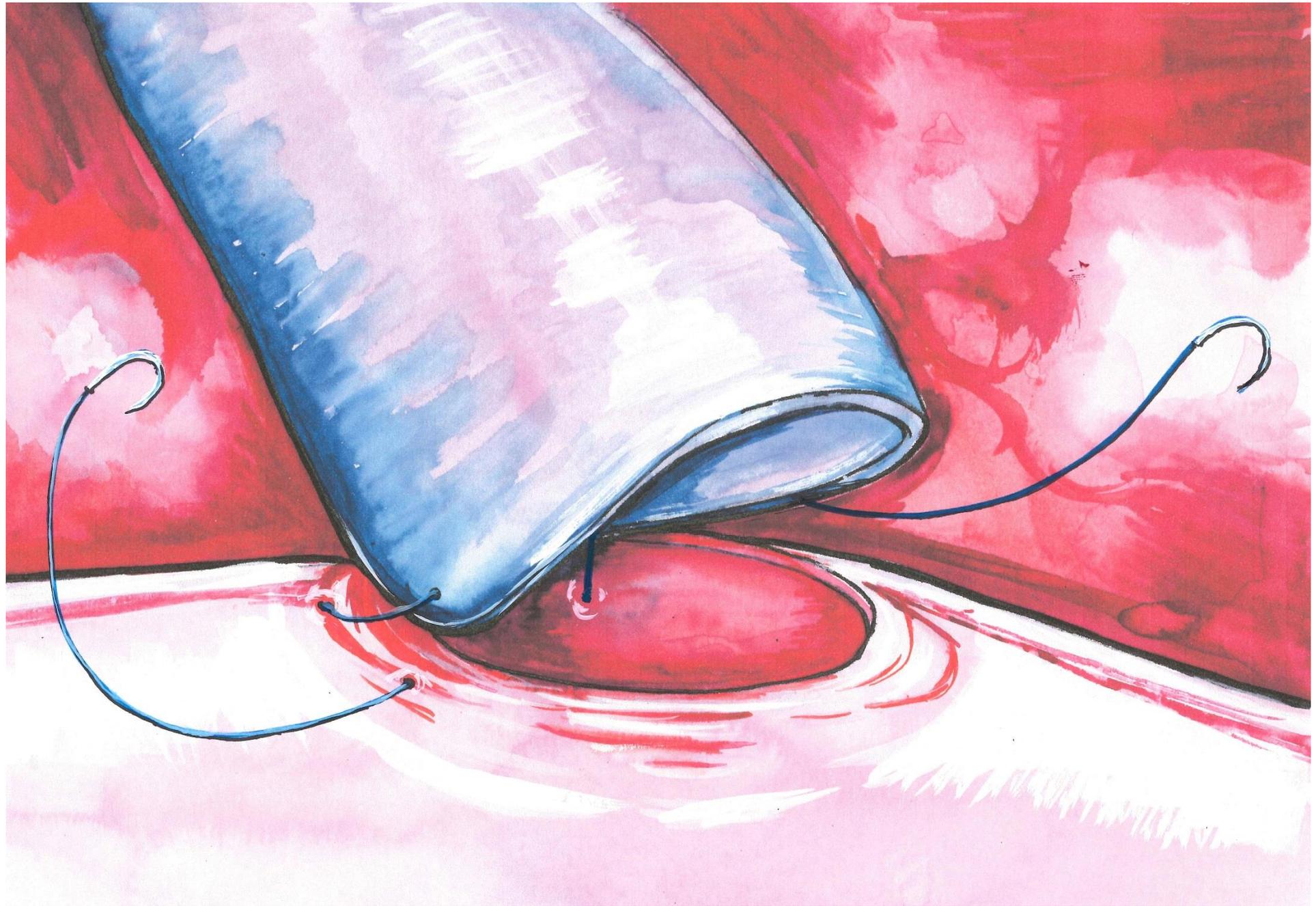


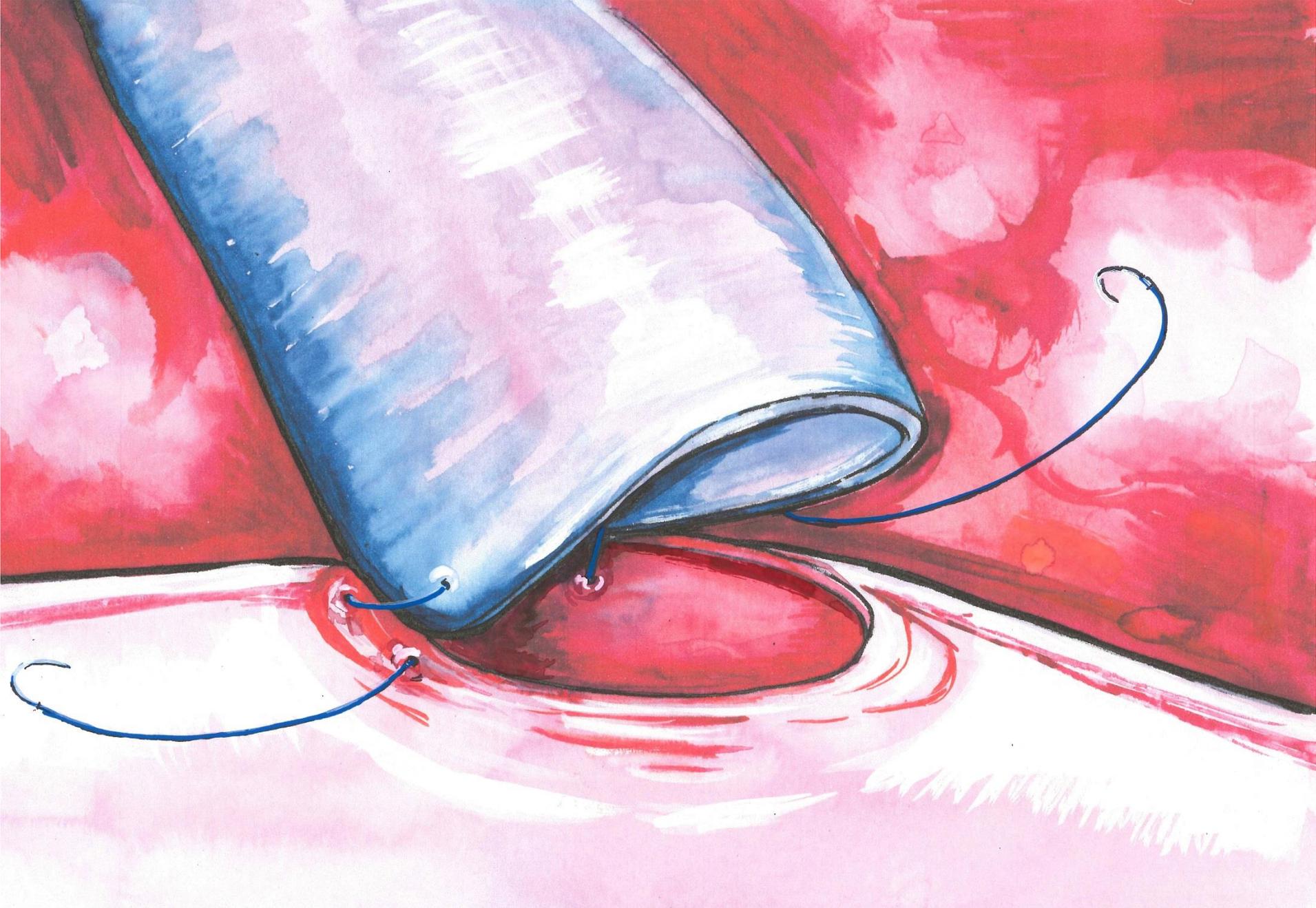


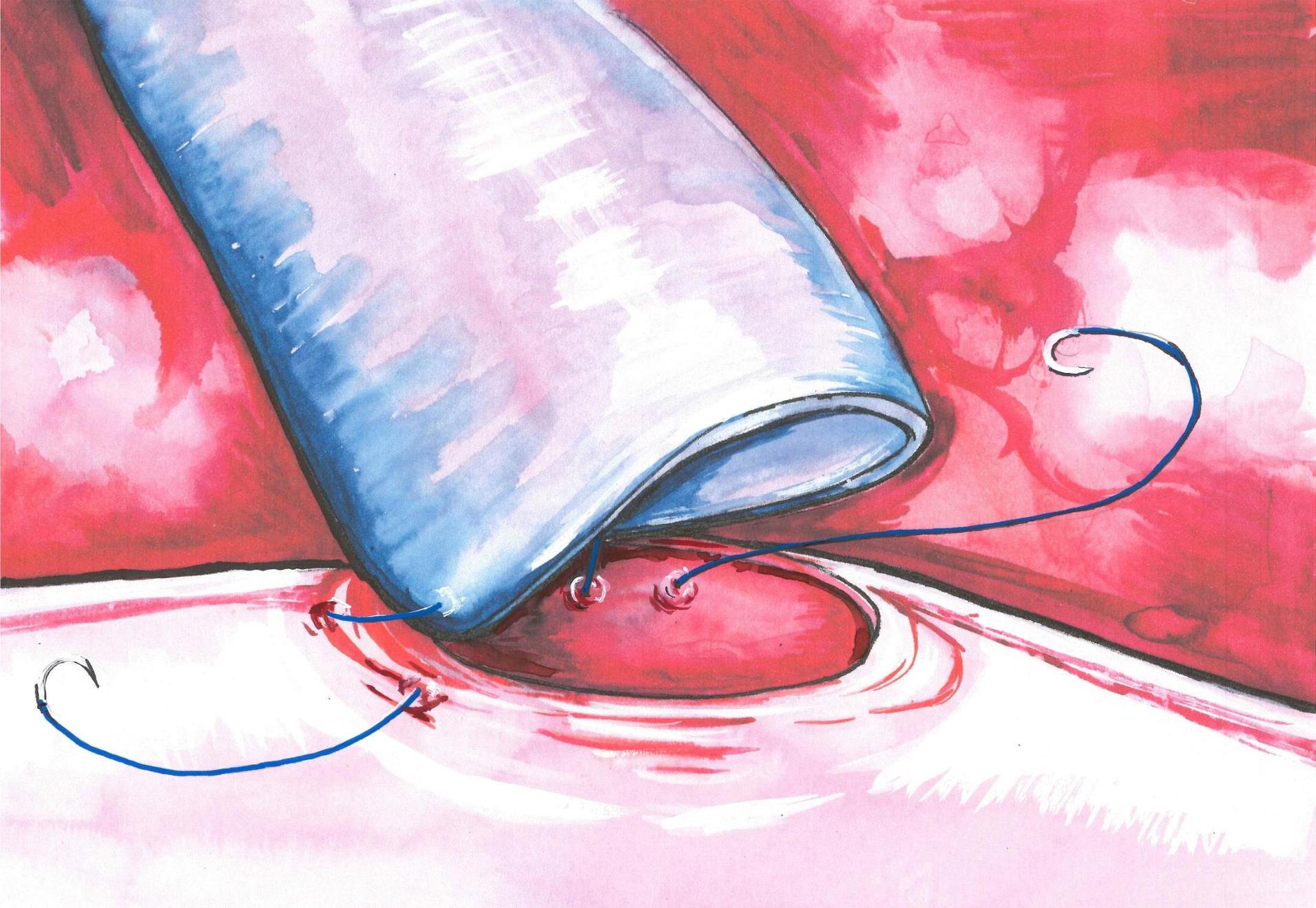


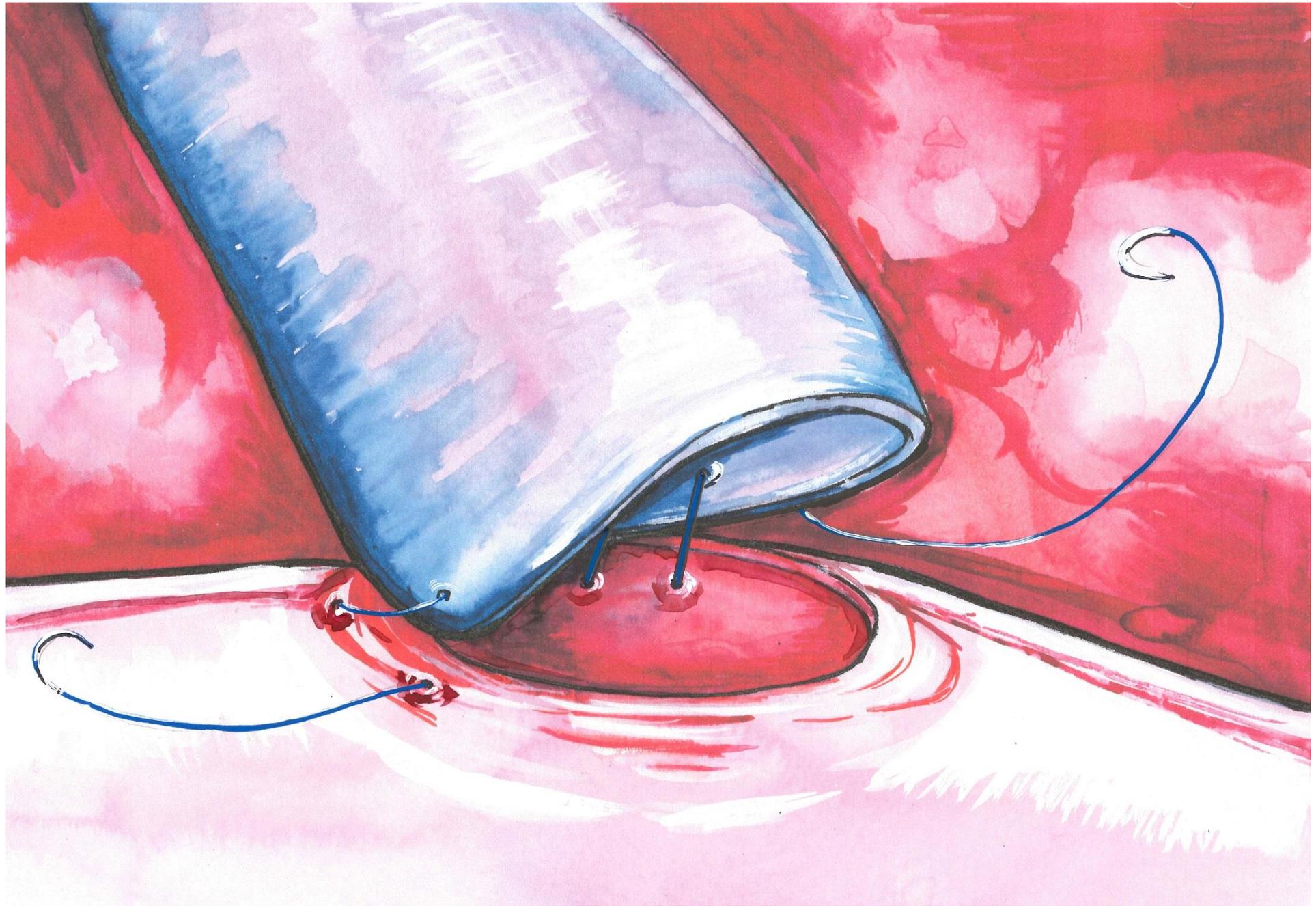


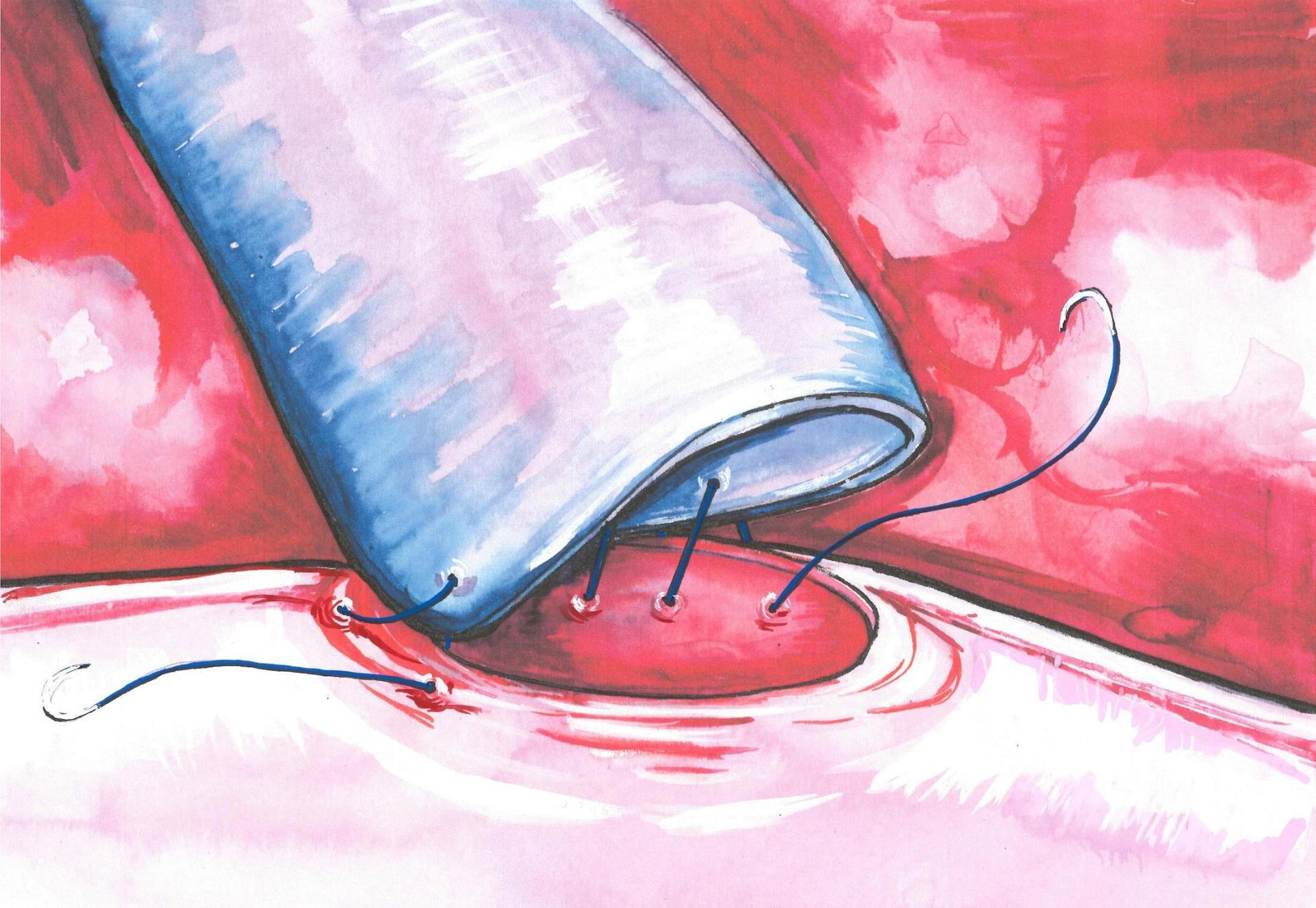


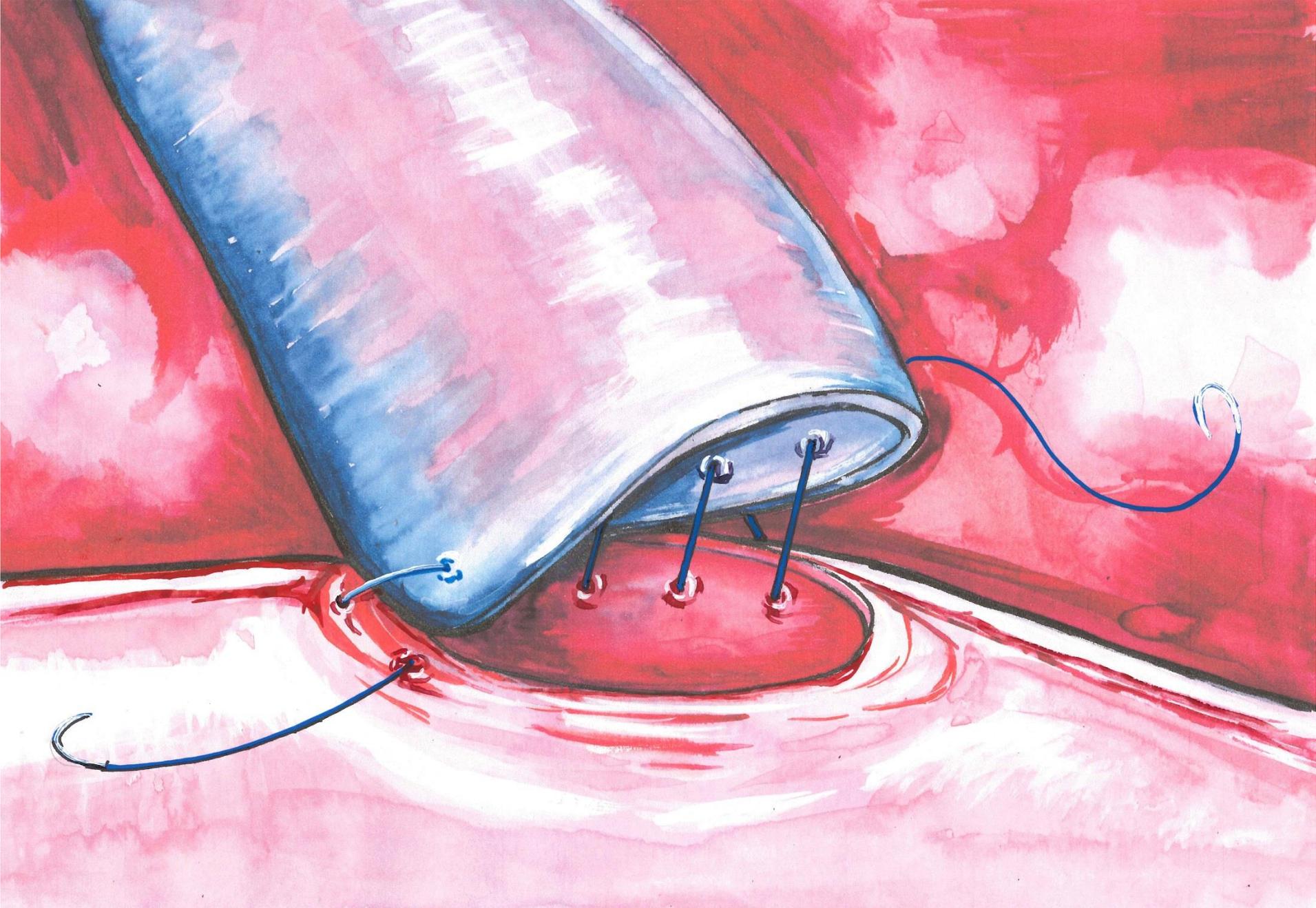


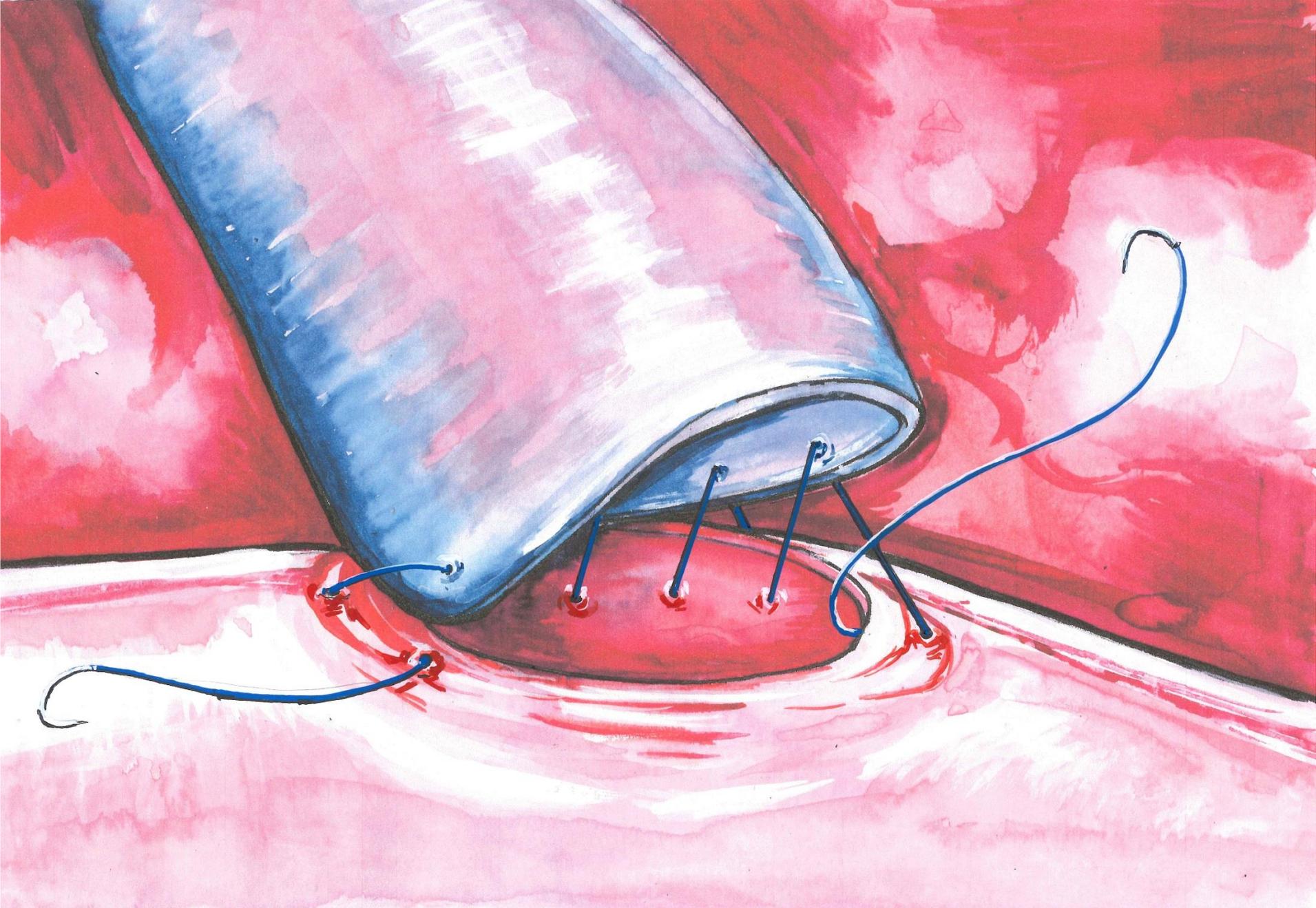


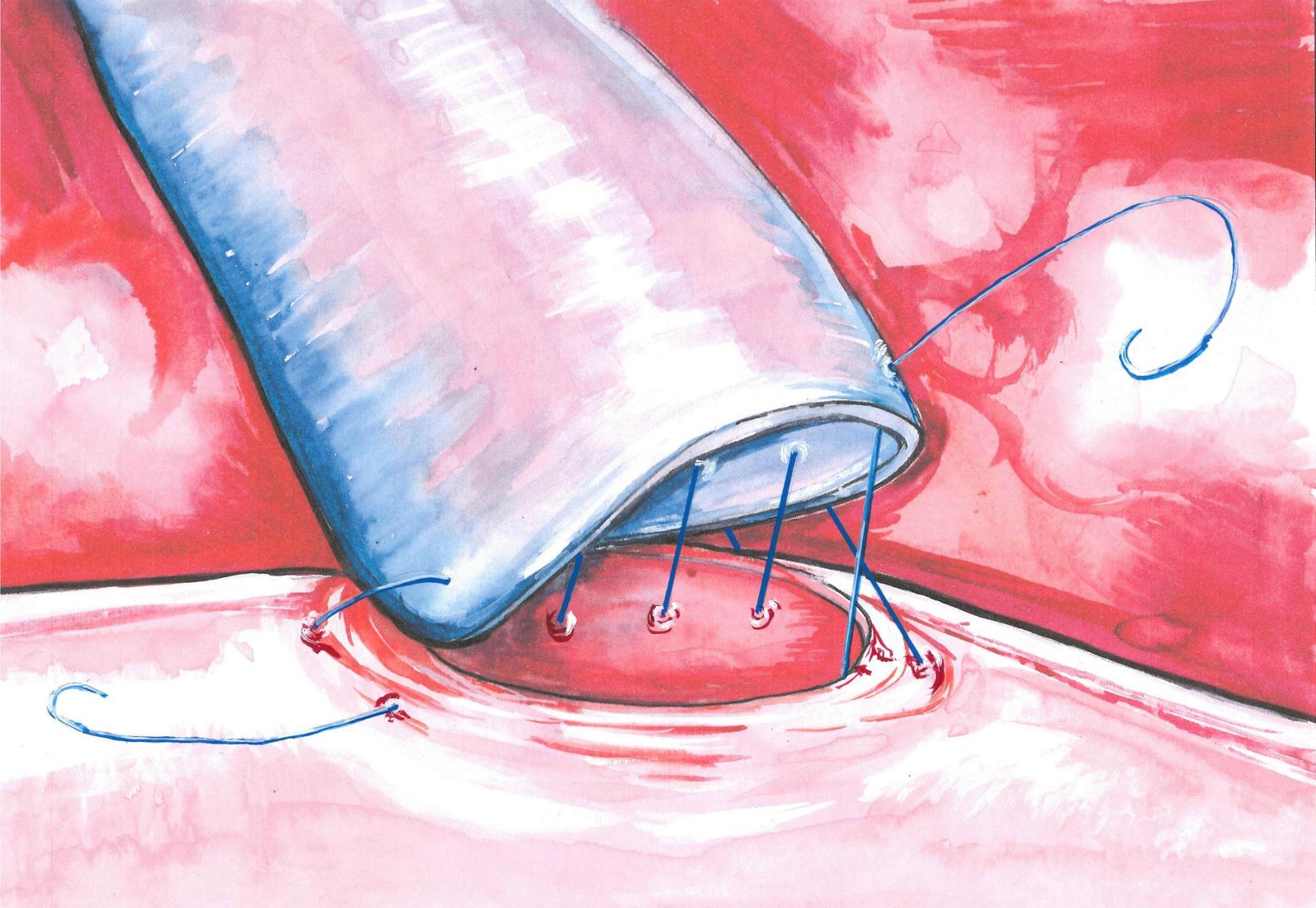


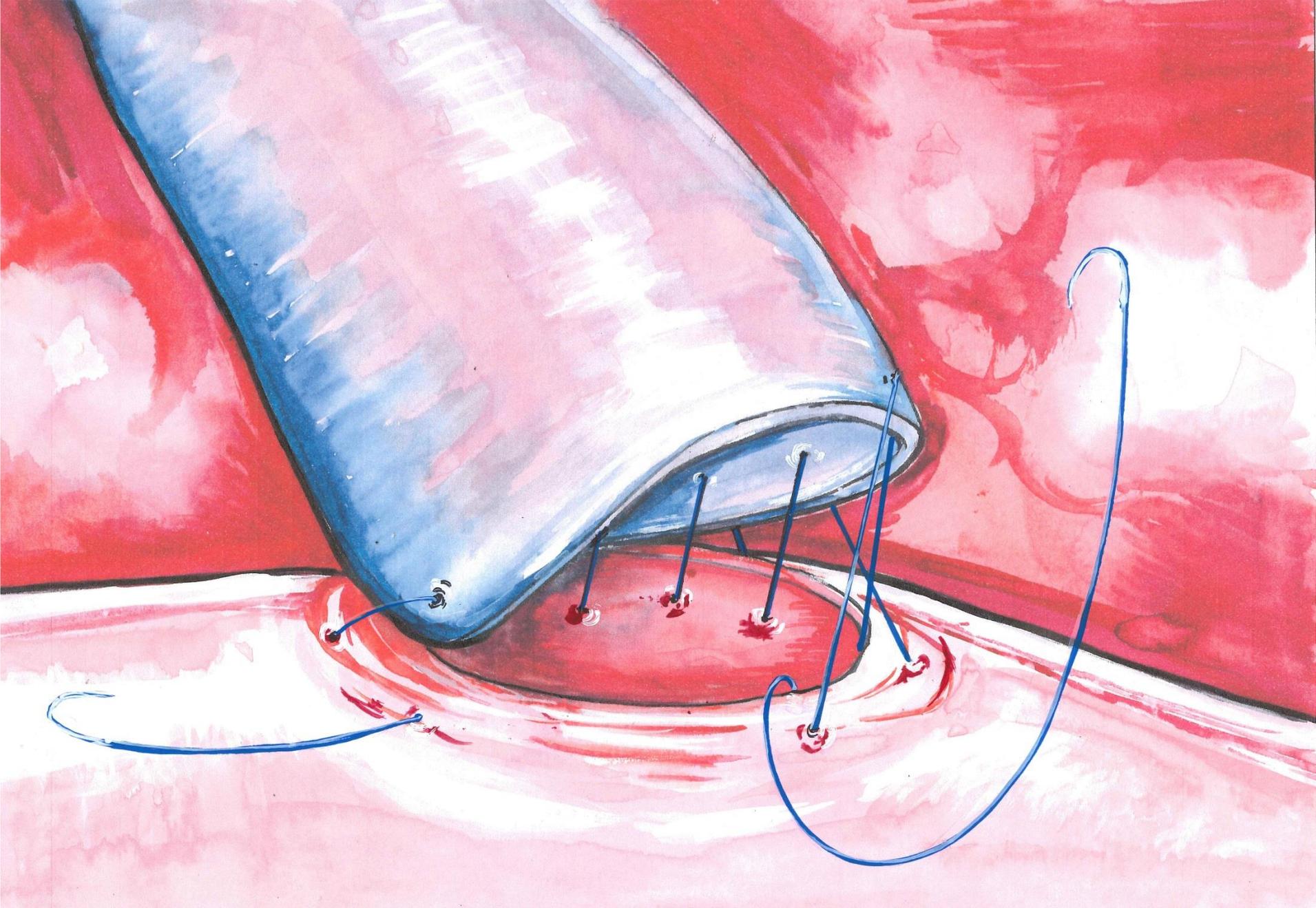


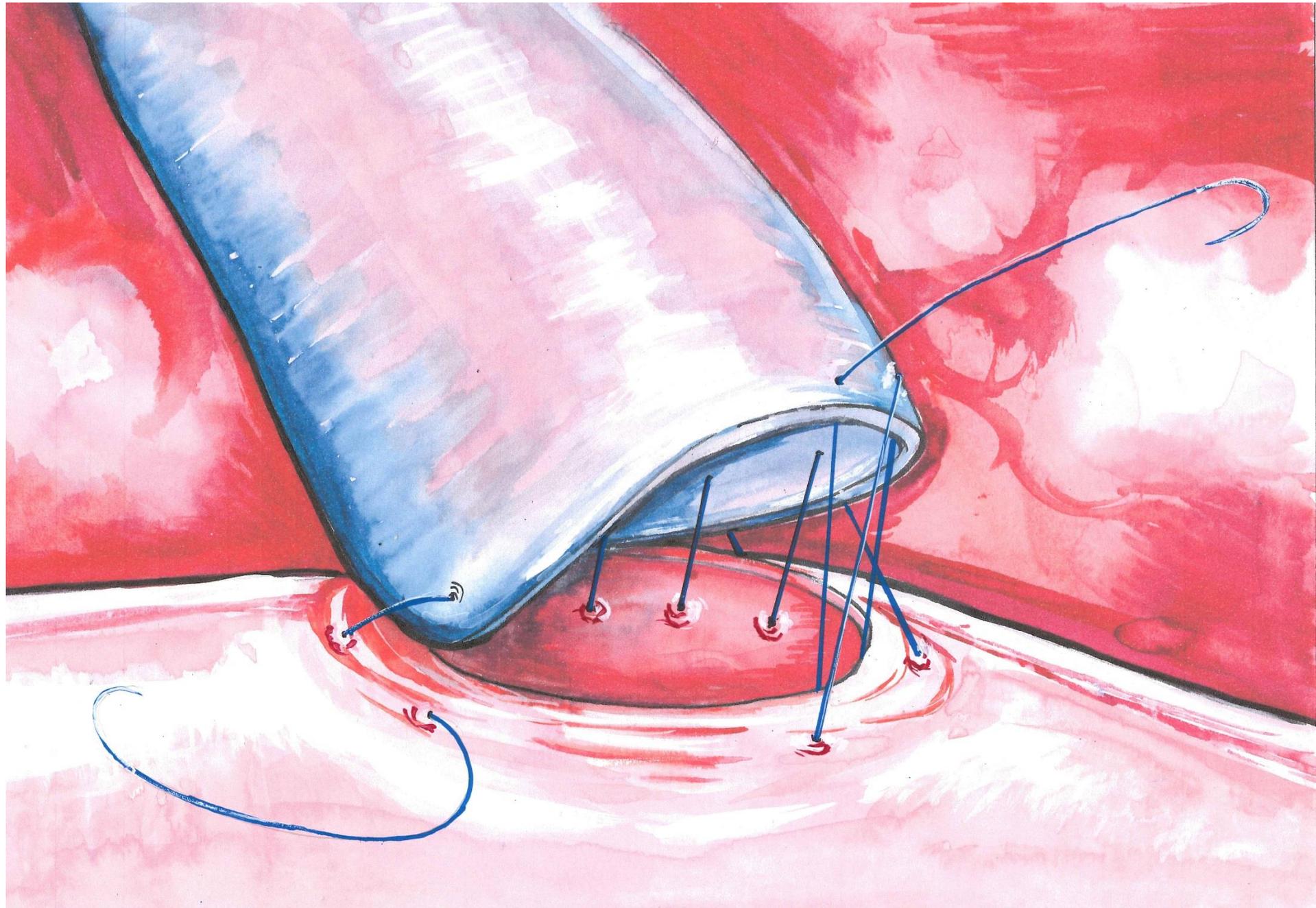


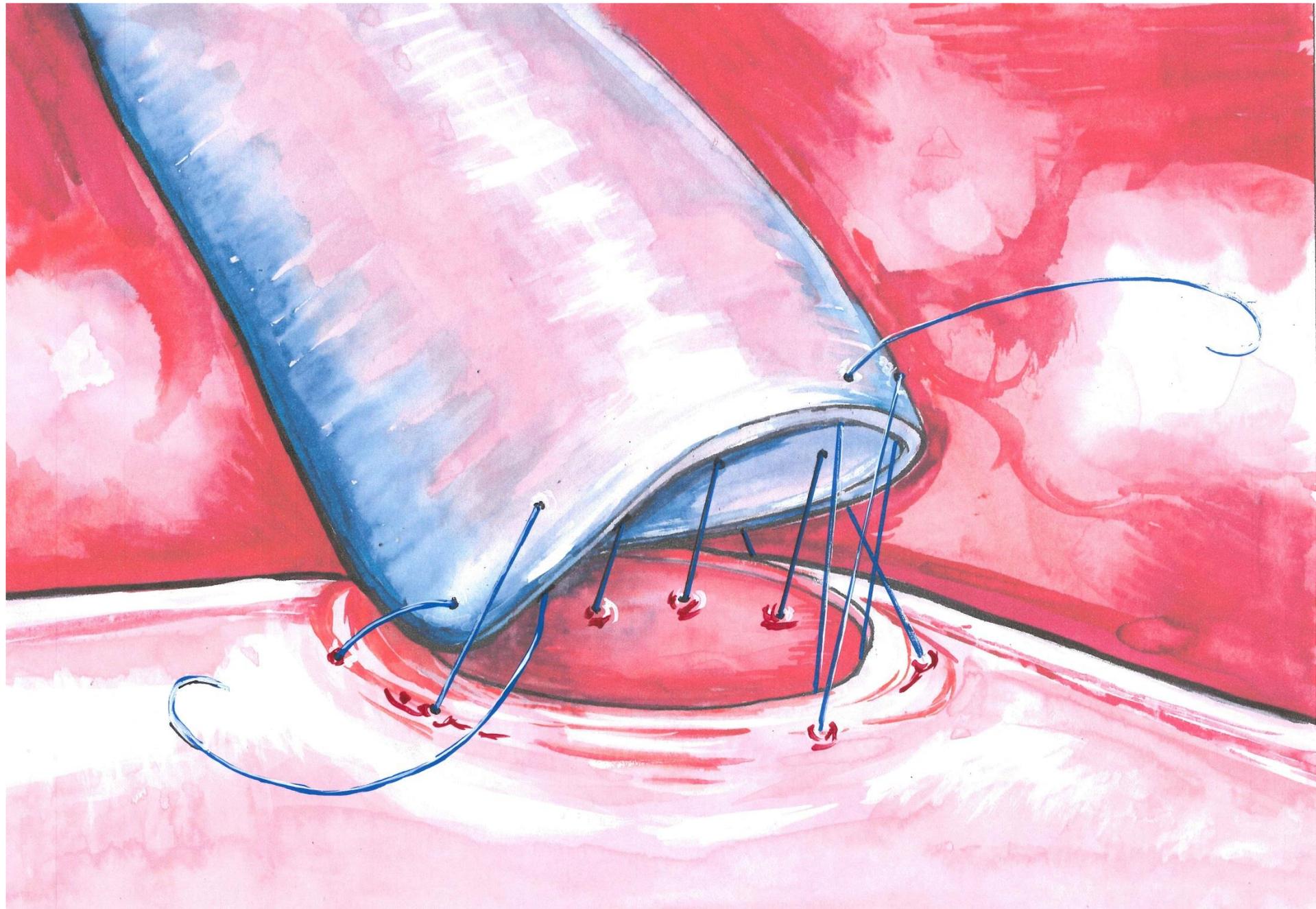


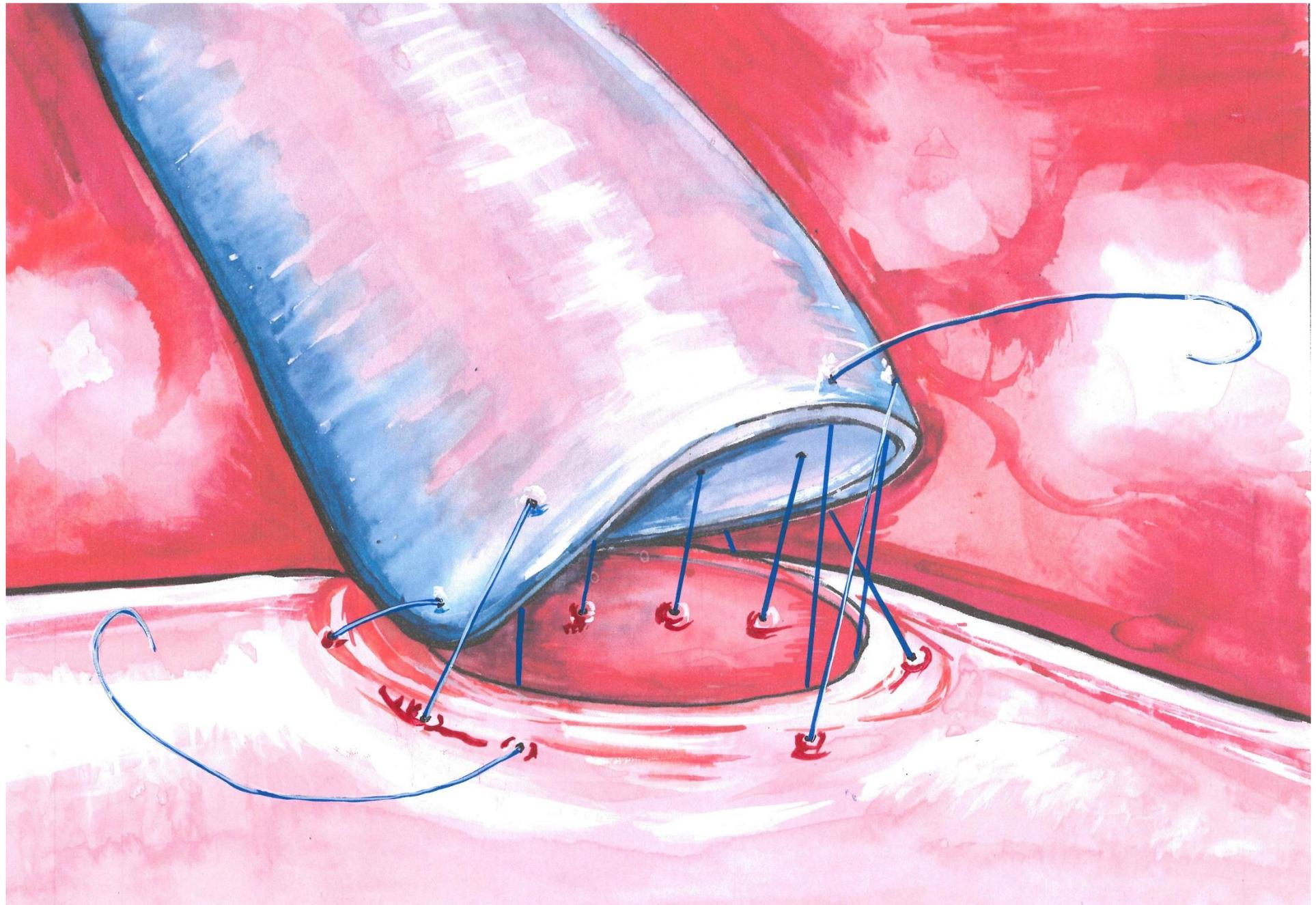


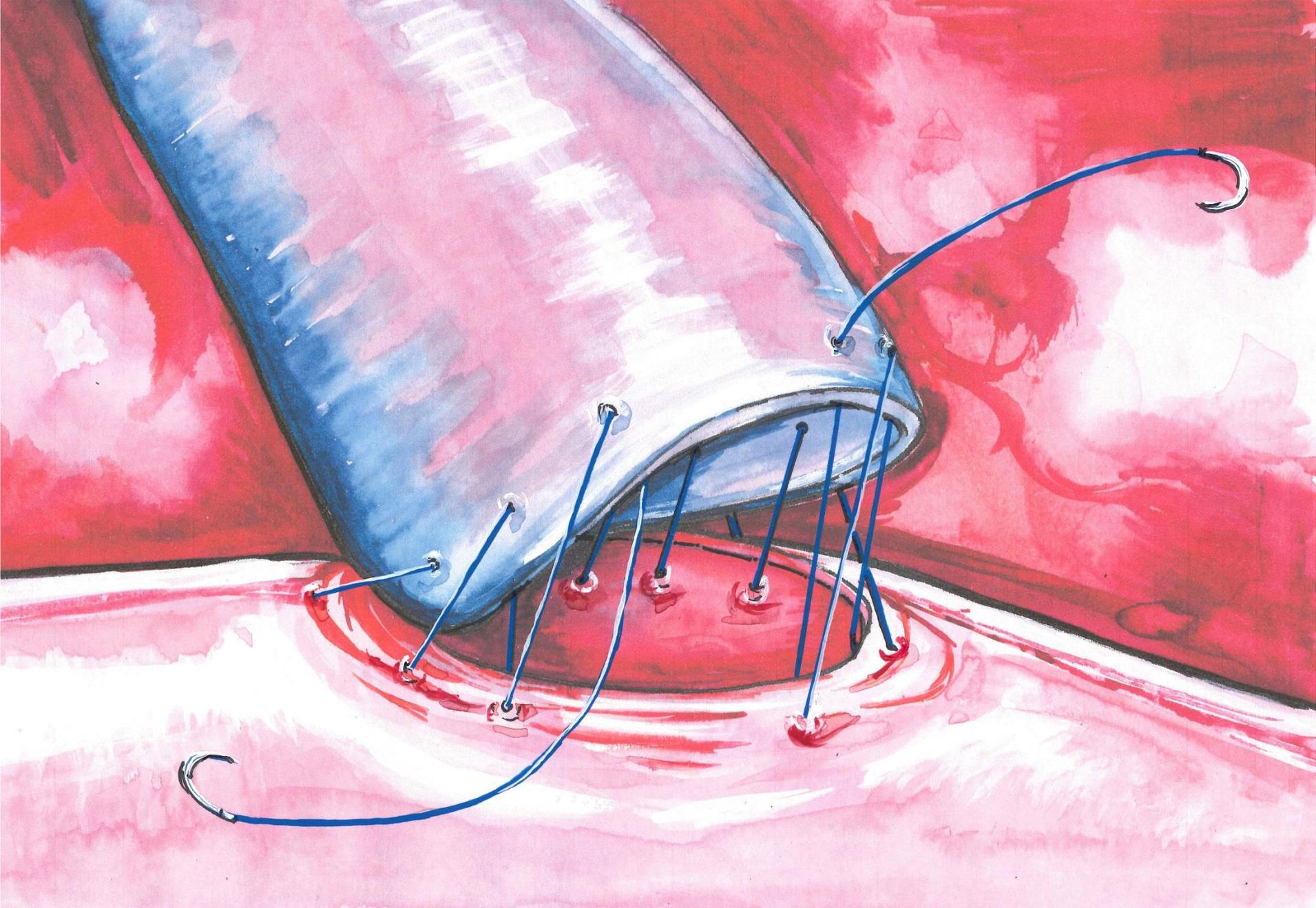


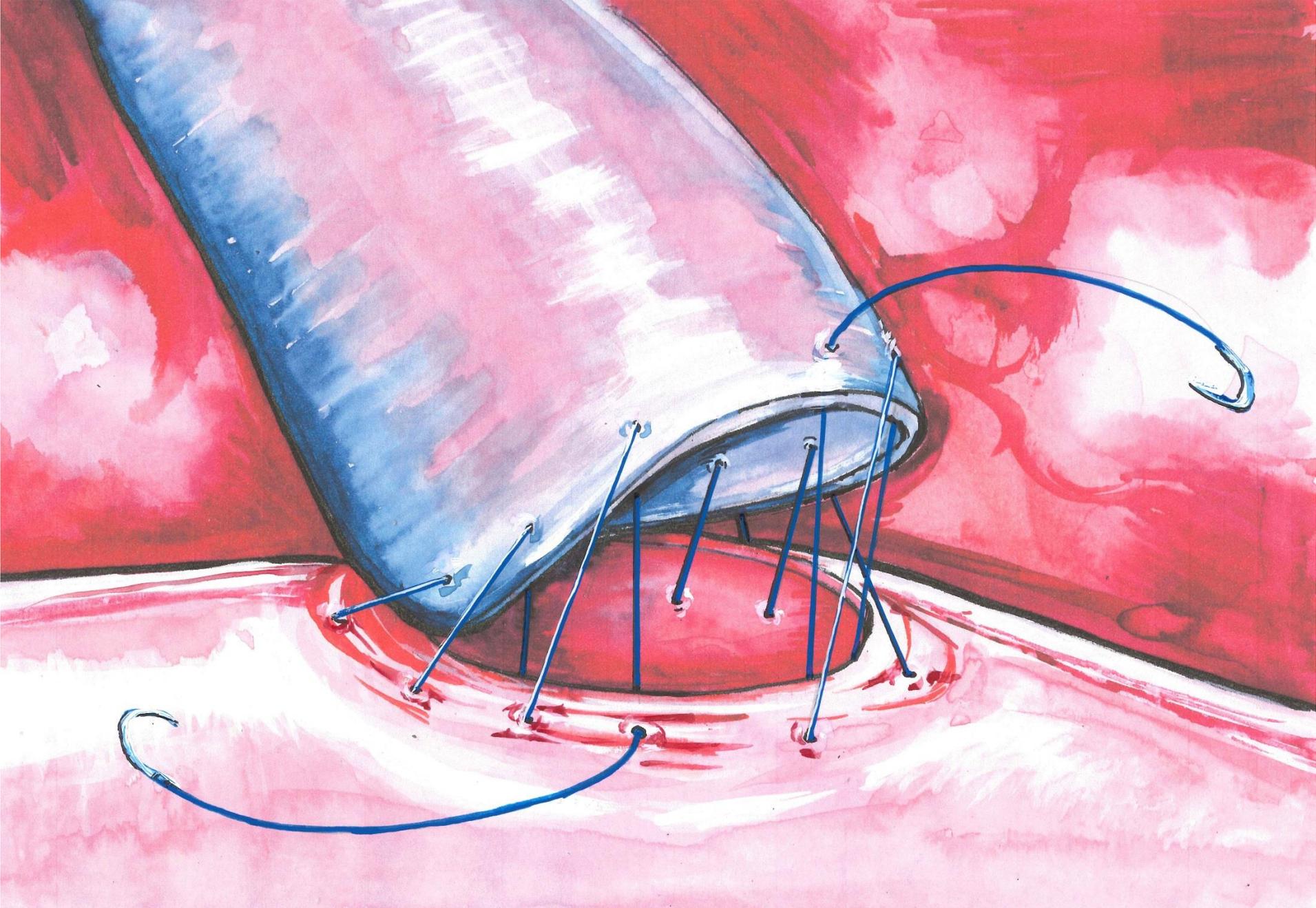








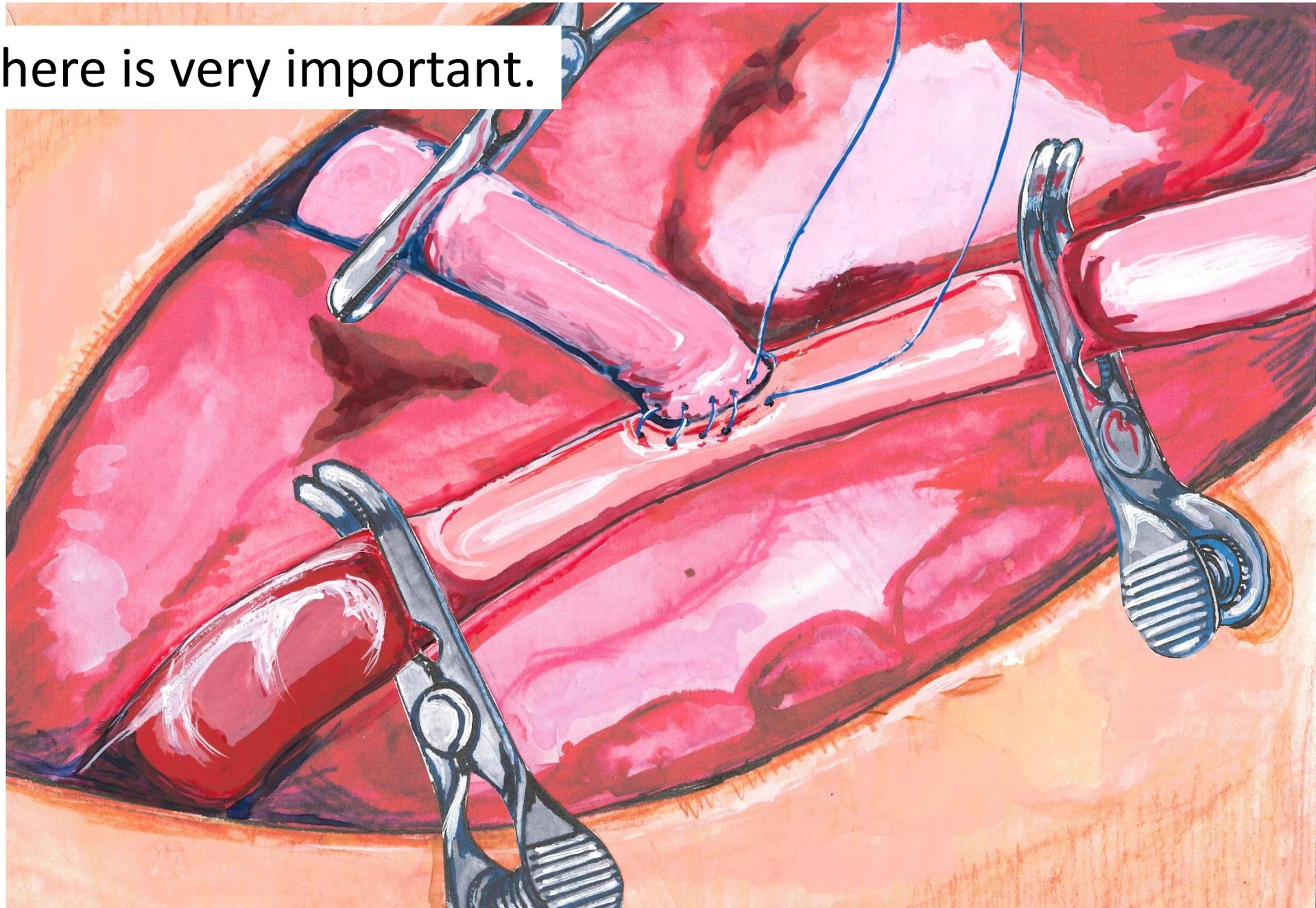


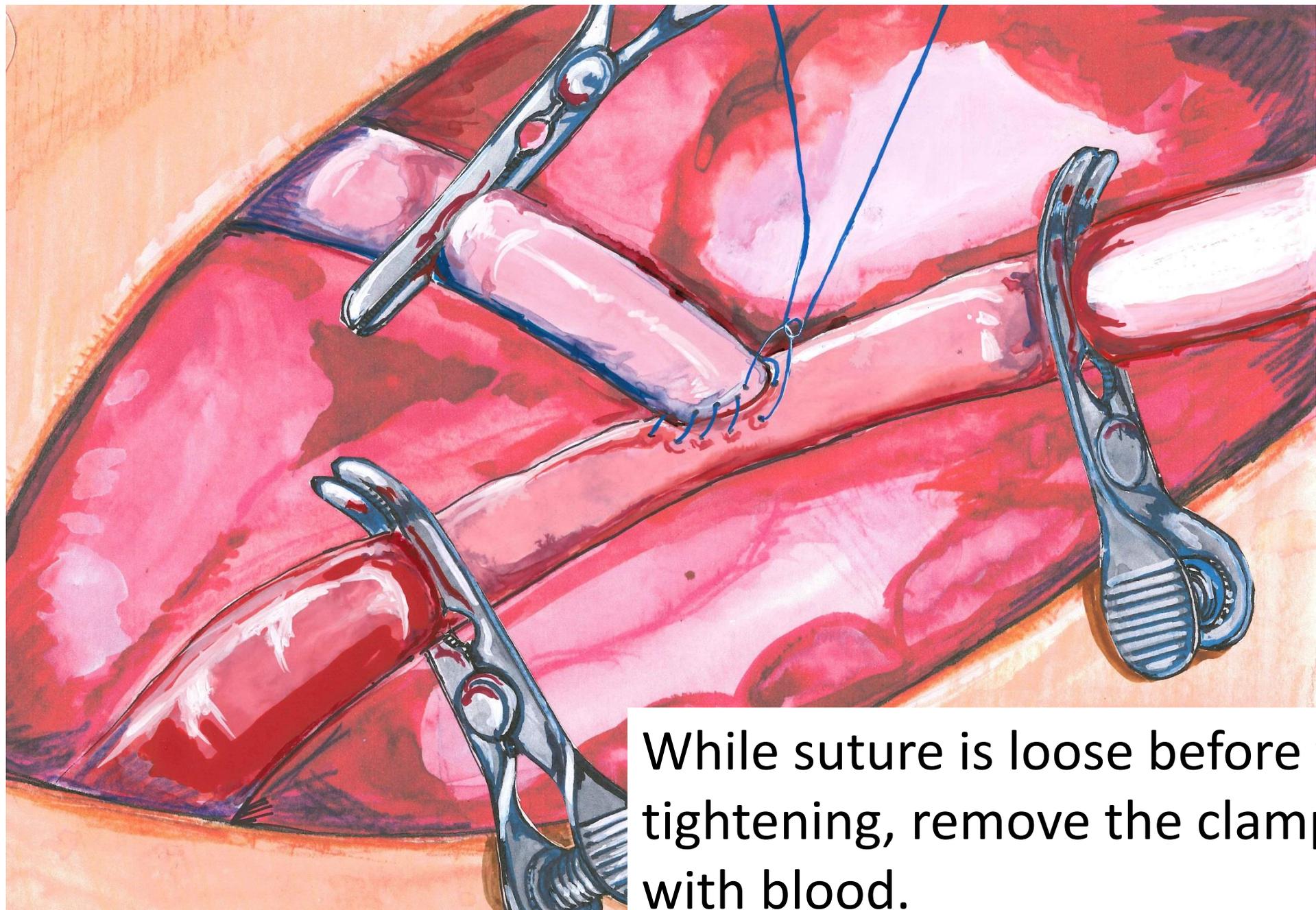






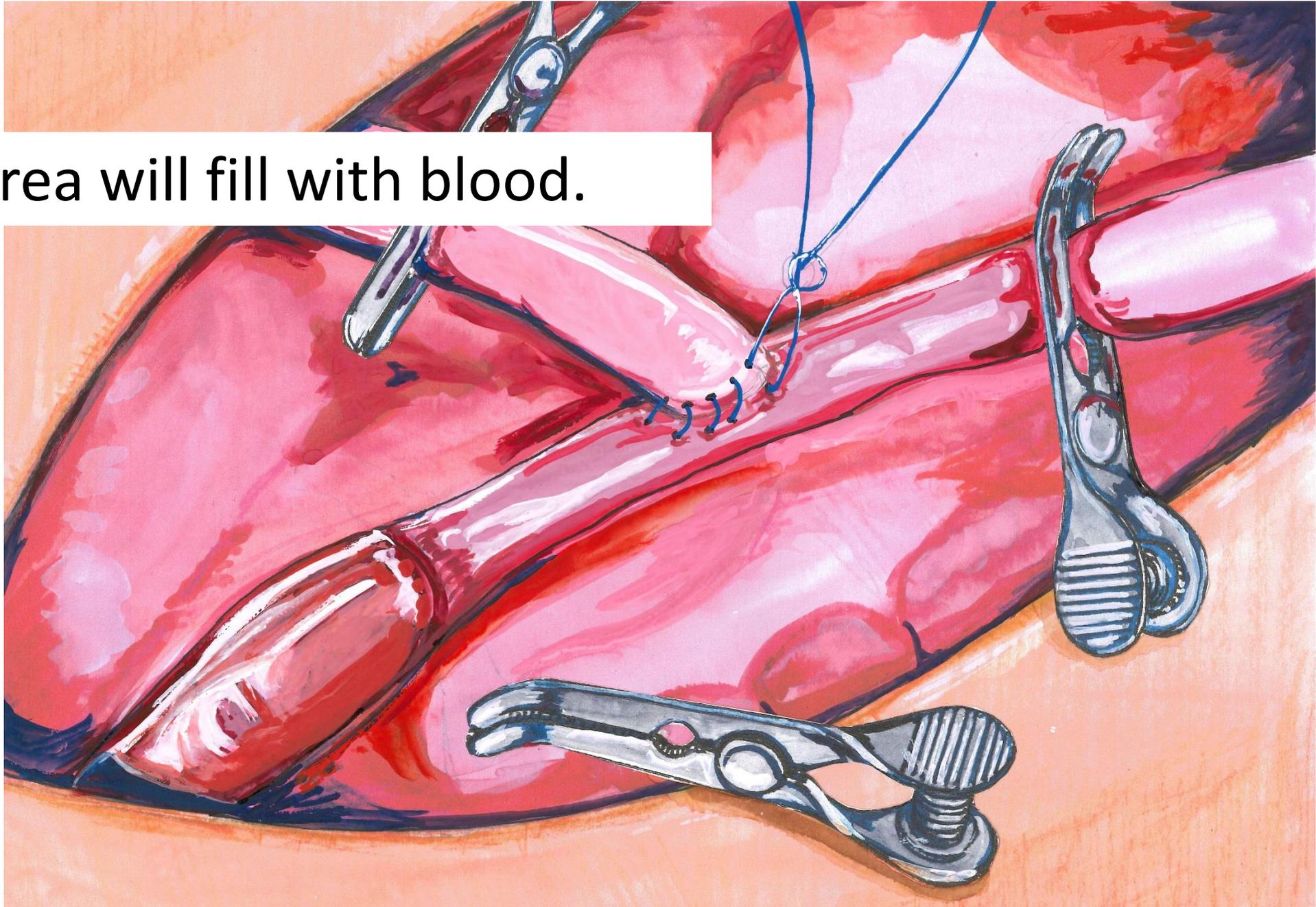
From here is very important.



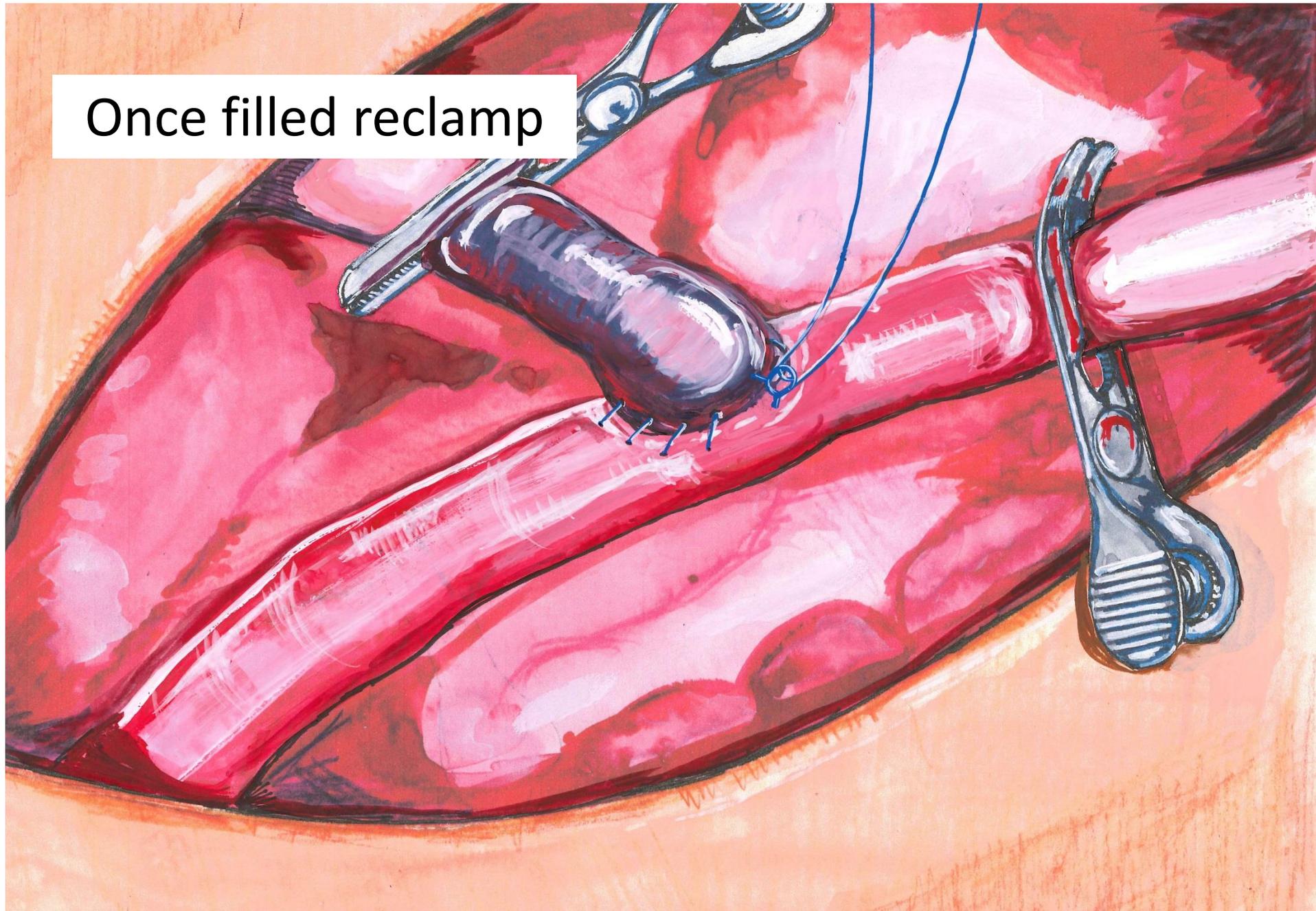


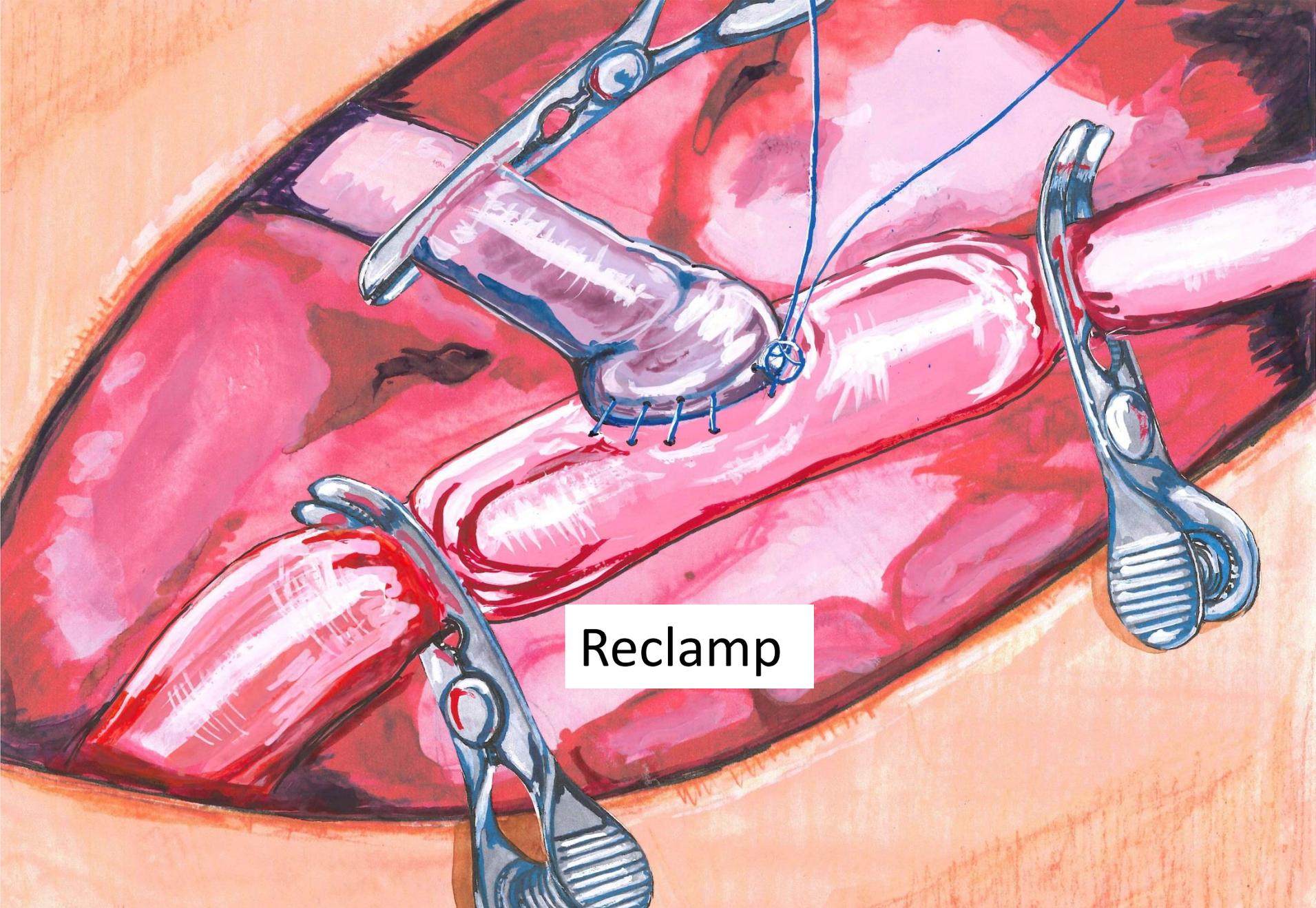
While suture is loose before final tightening, remove the clamp to fill with blood.

Area will fill with blood.

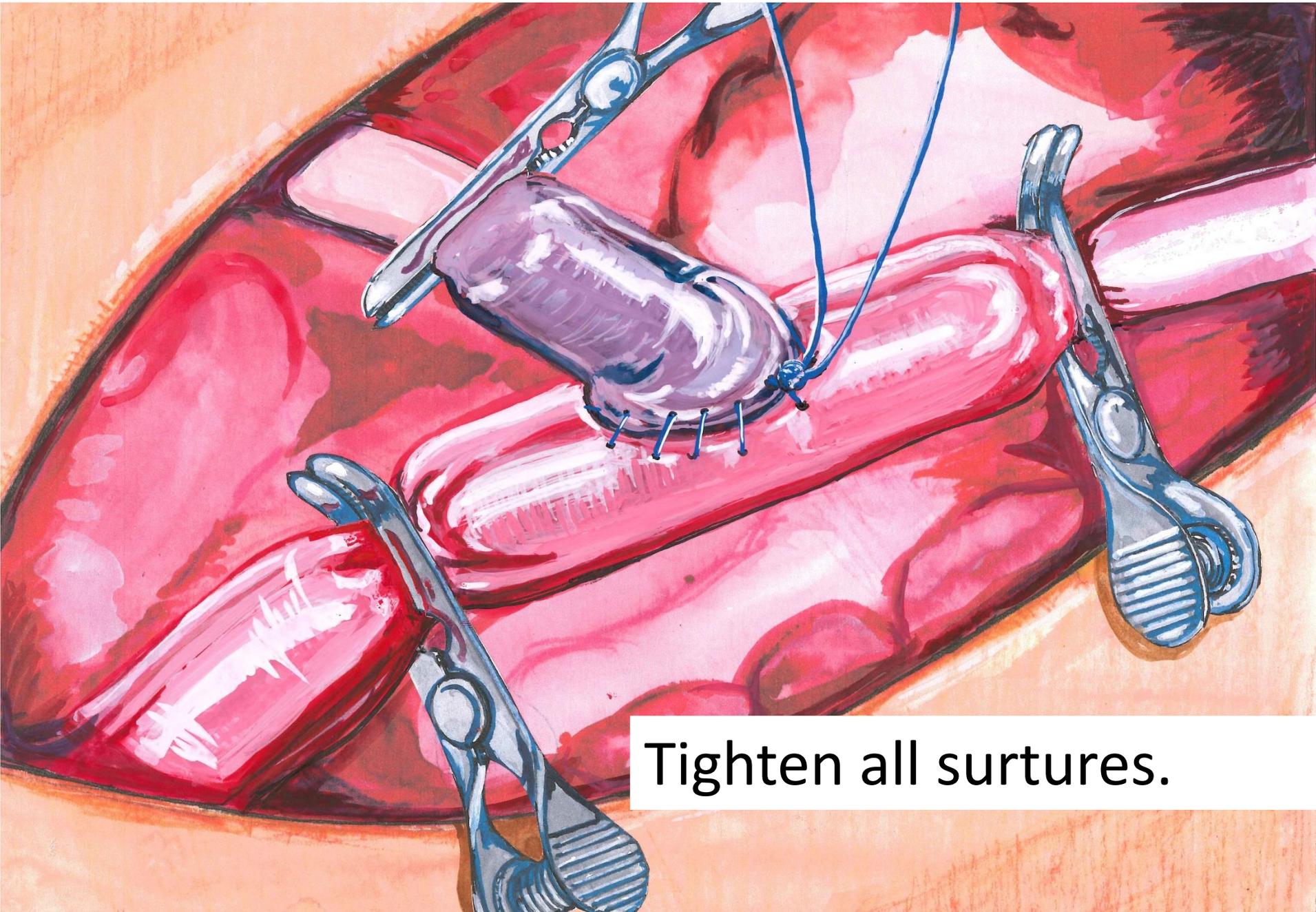


Once filled reclamp

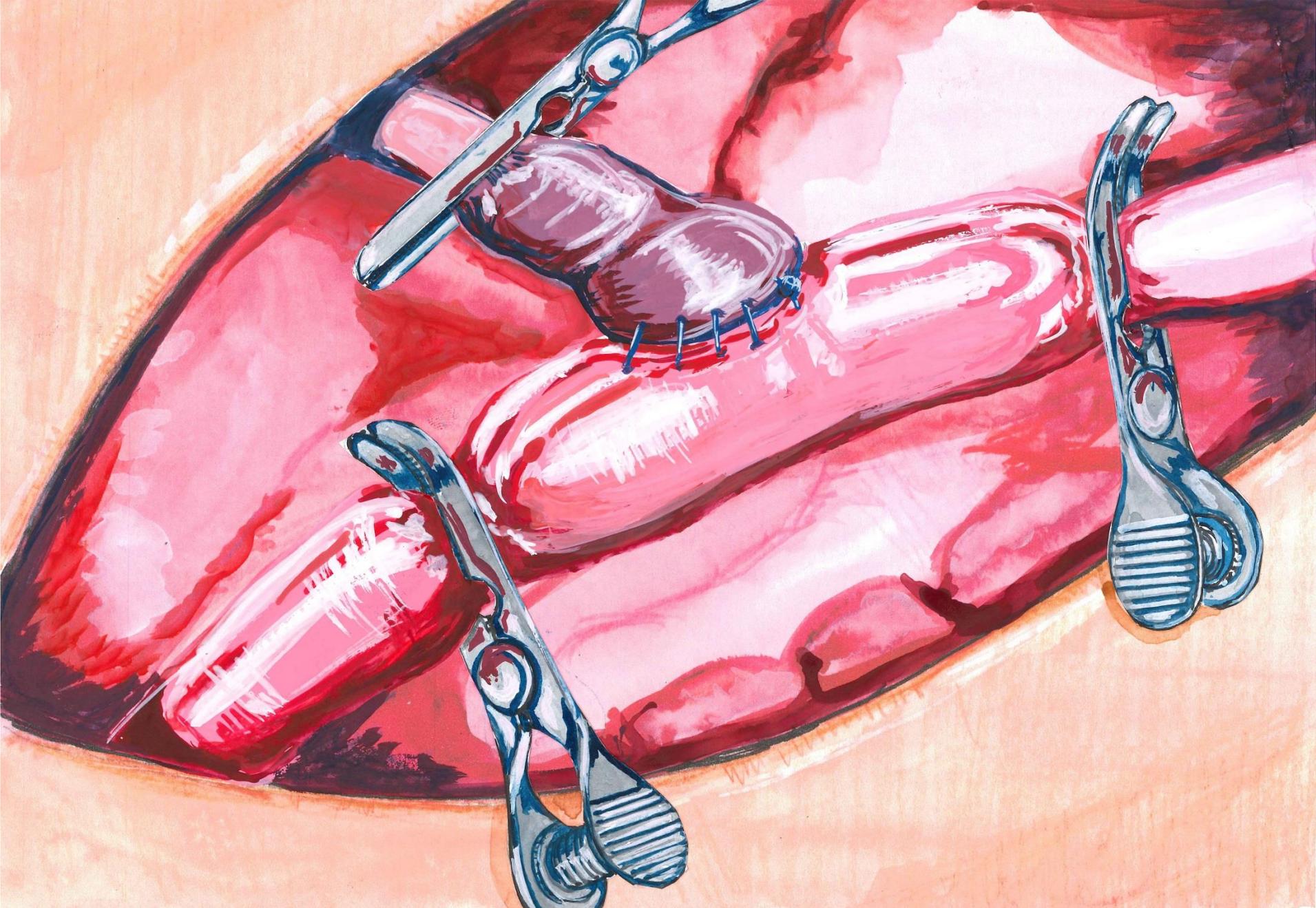


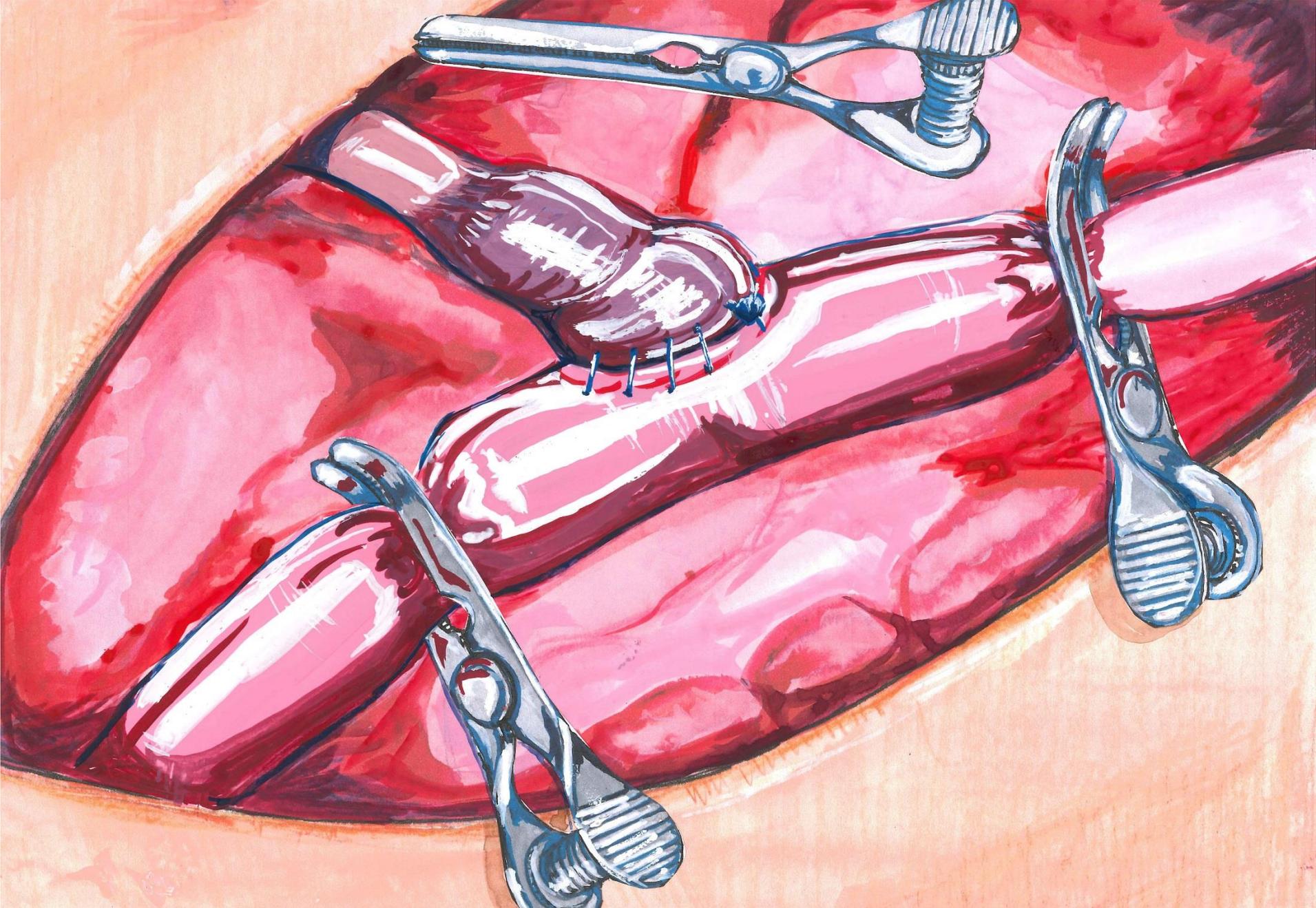


Reclamp



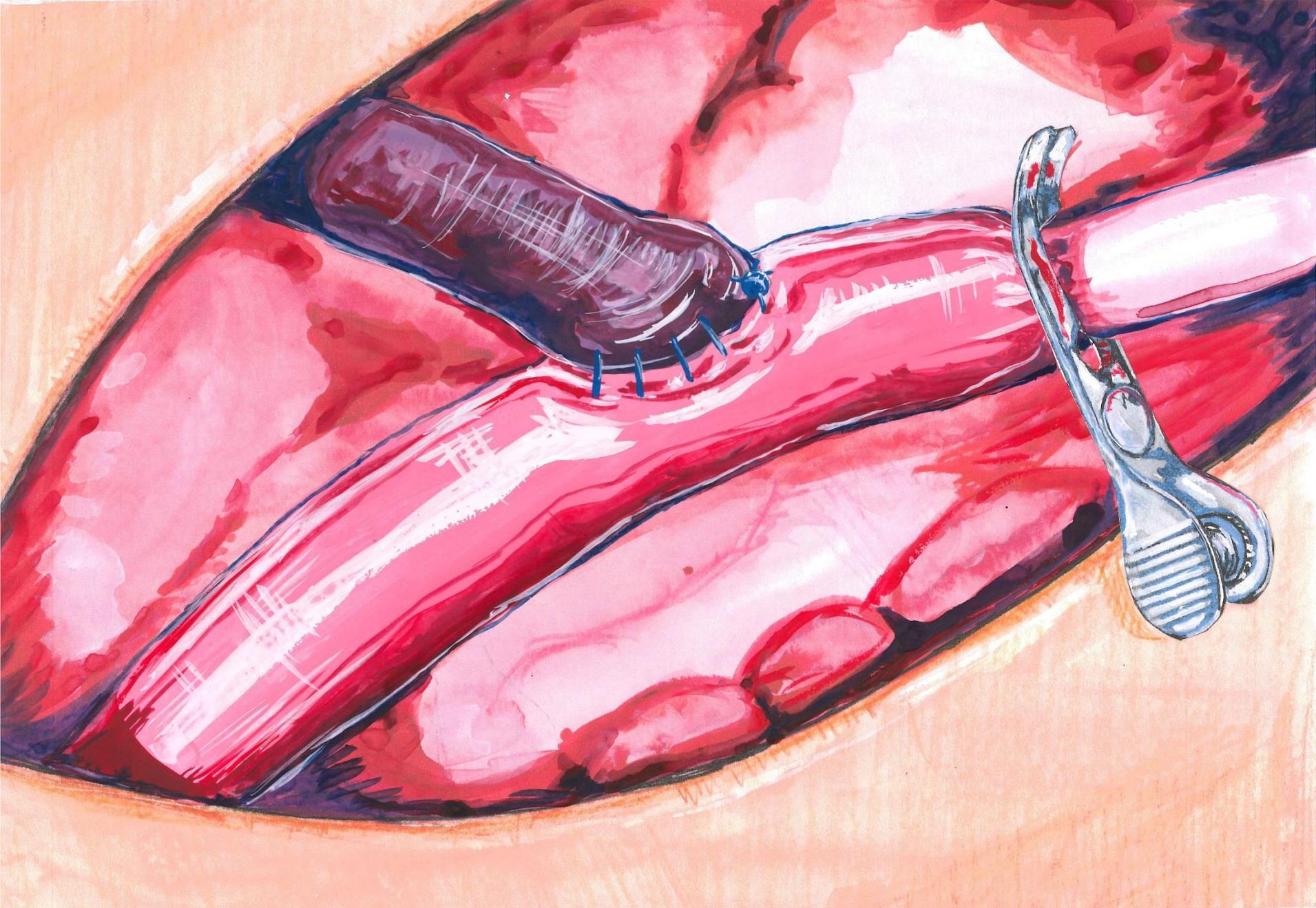
Tighten all surtures.

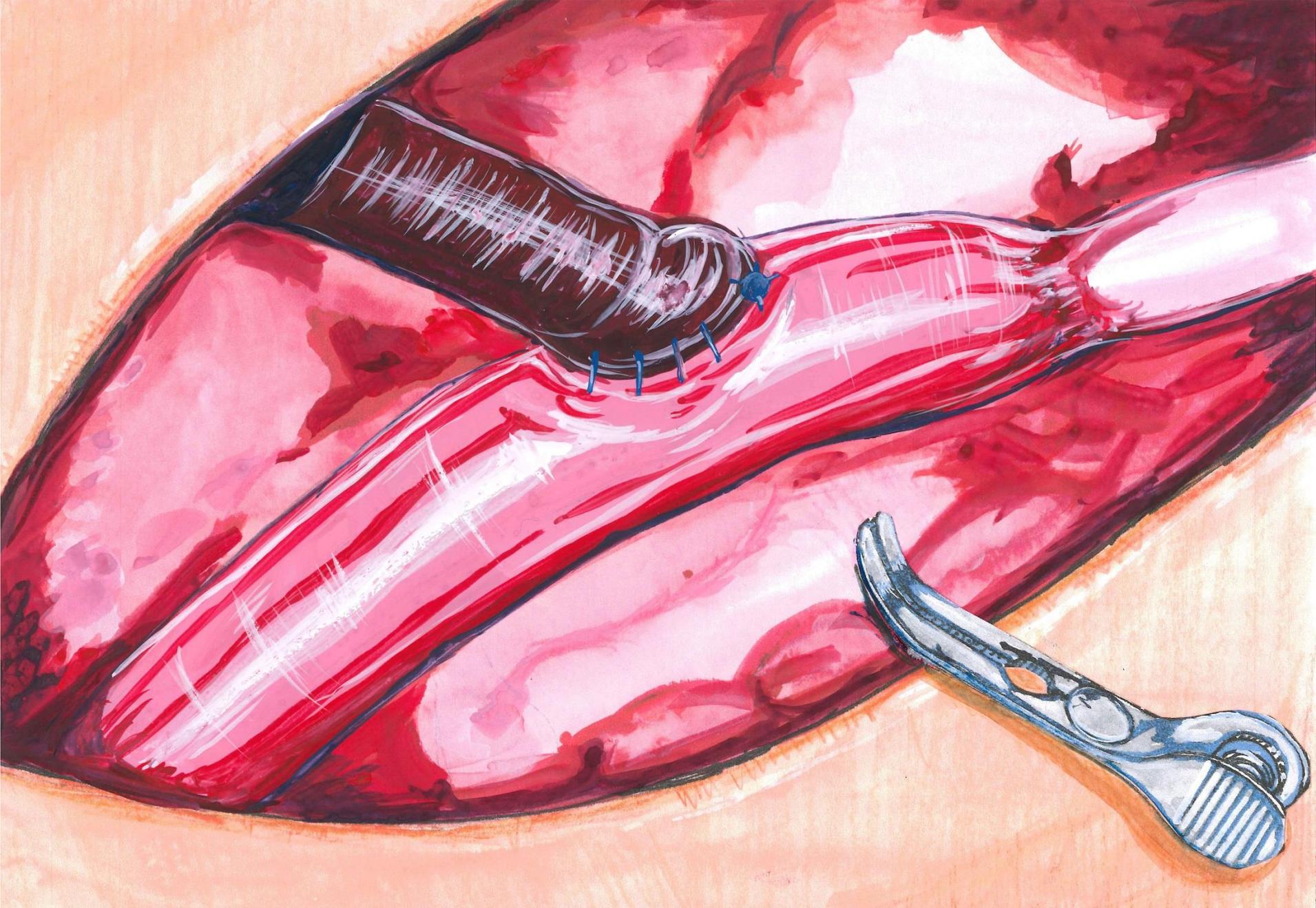




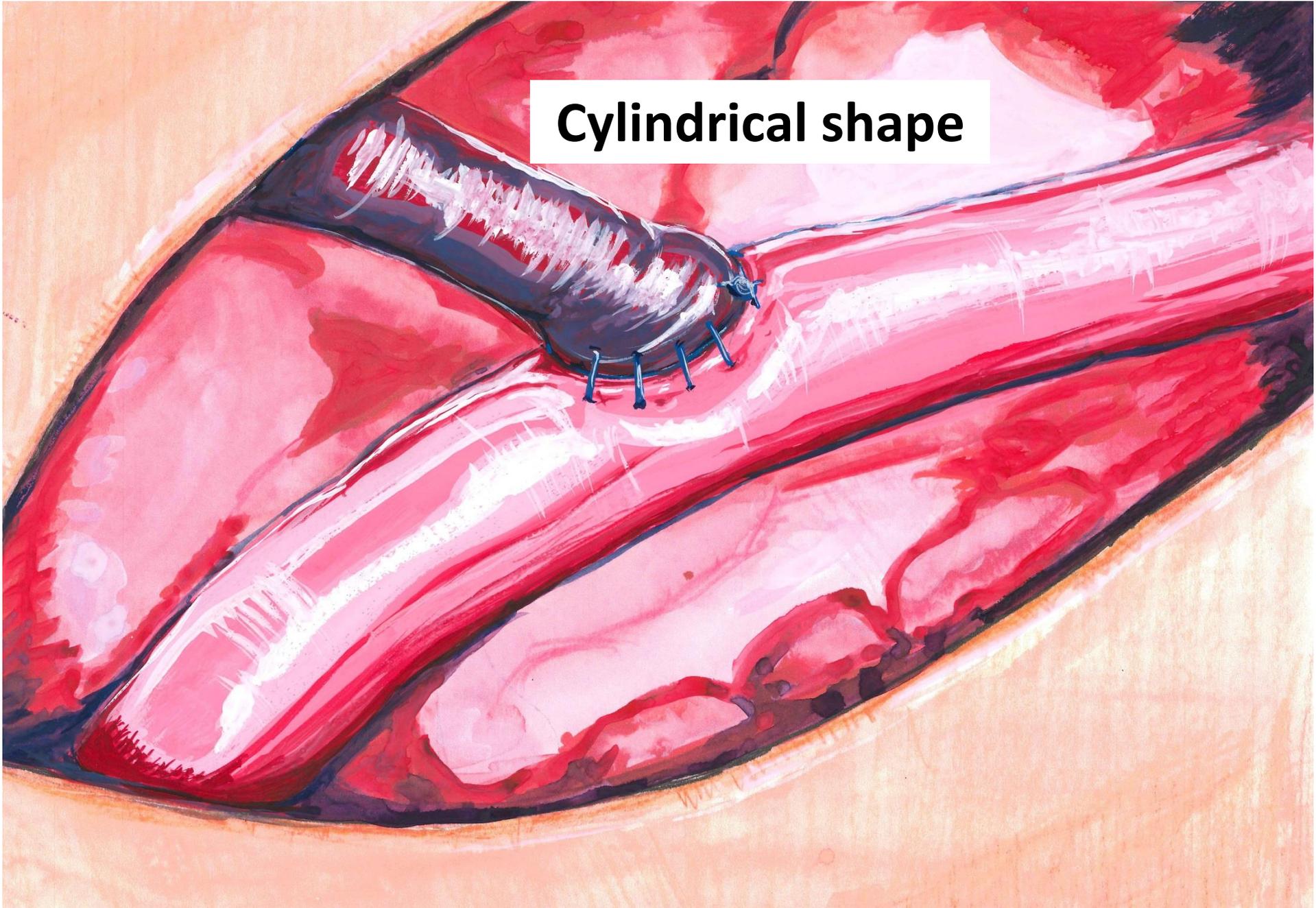








Cylindrical shape



< Using Parachute Technique:

Surgery time as an evaluation method >

1. Surgical time :

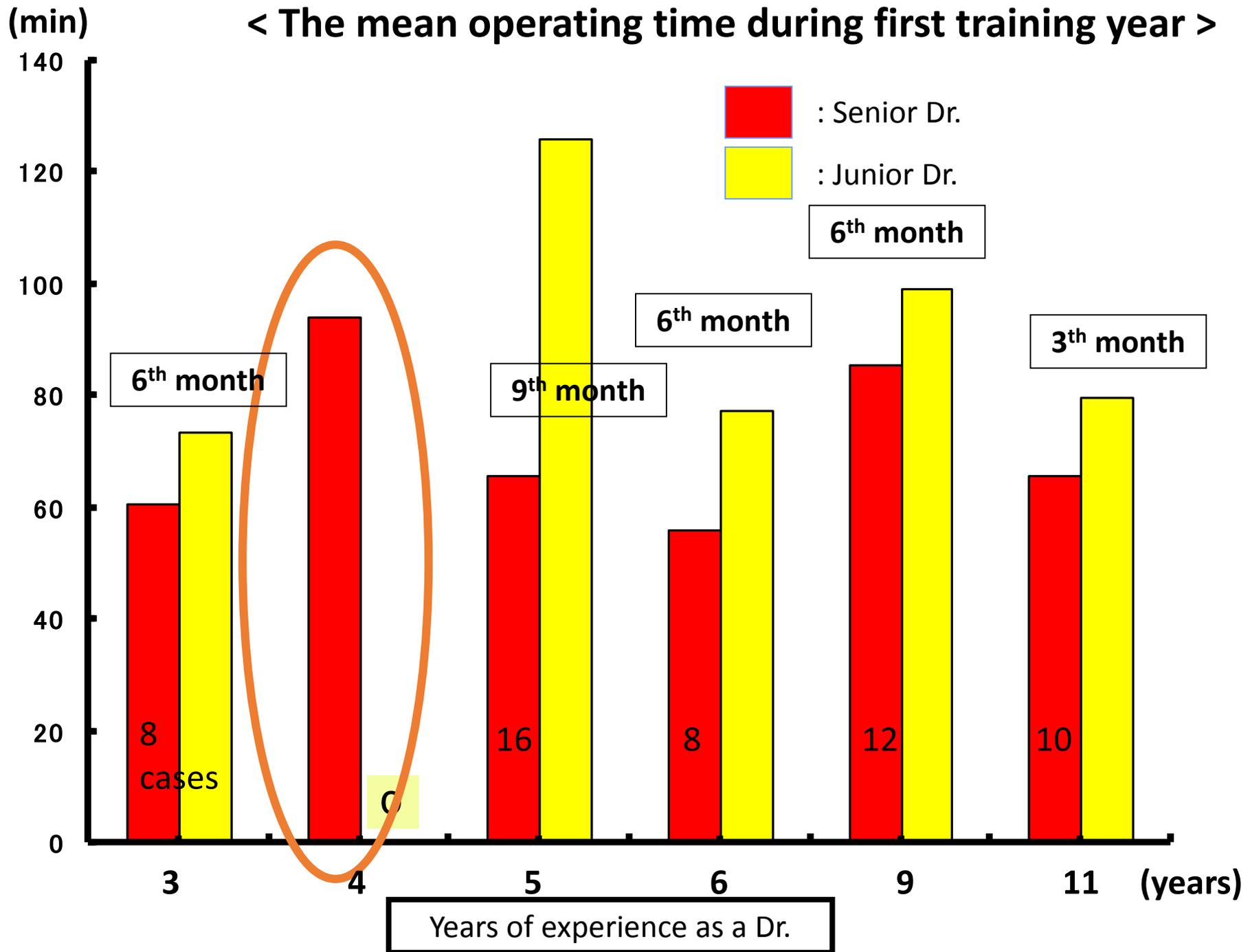
From local anesthesia to applying a dressing after skin suture.

2. Surgery time for guidance assisted by senior doctor.

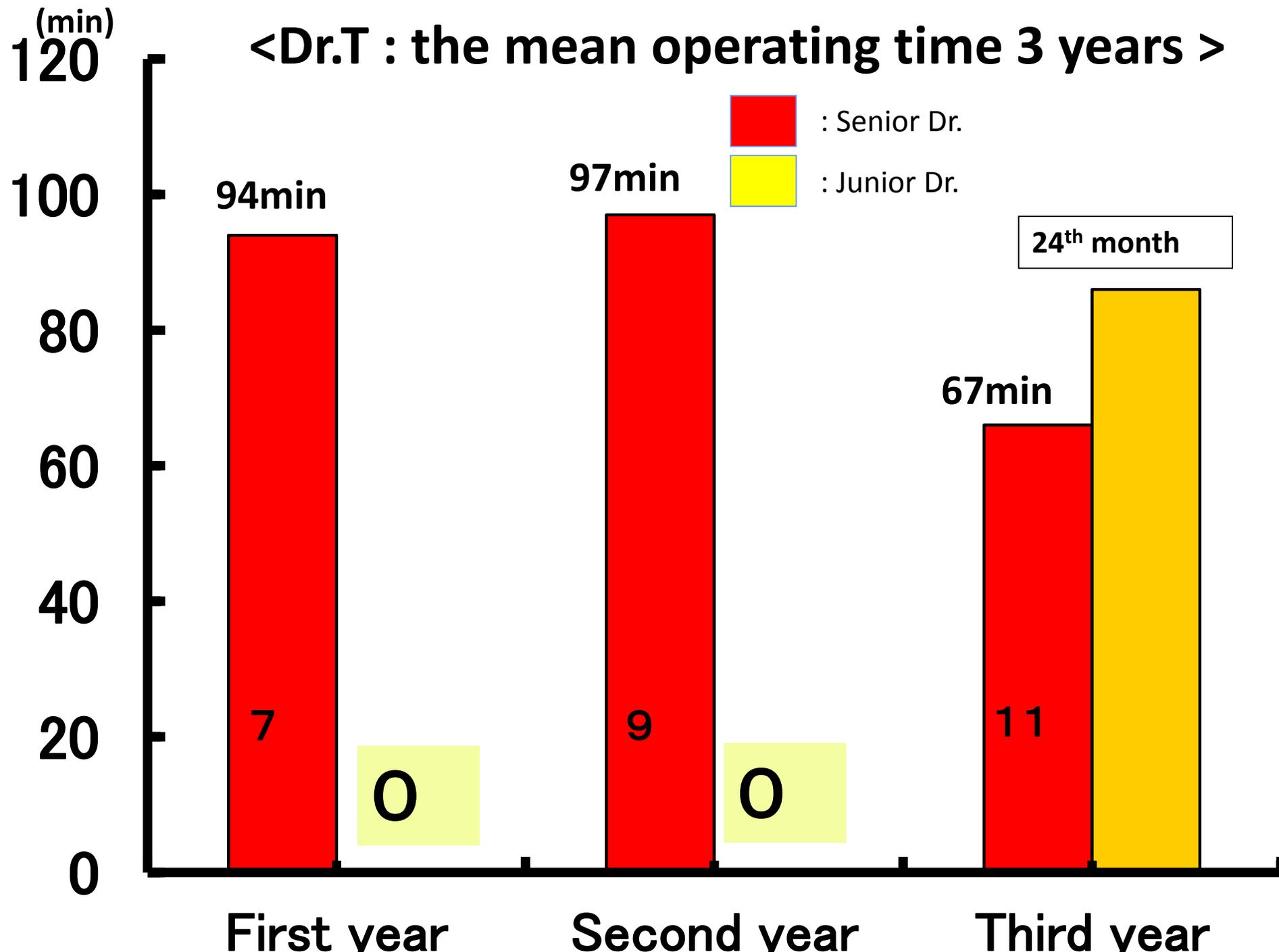
3. Surgery with junior assistant.

(4. Assistant experience of 10 to 30 cases.)

< The mean operating time during first training year >

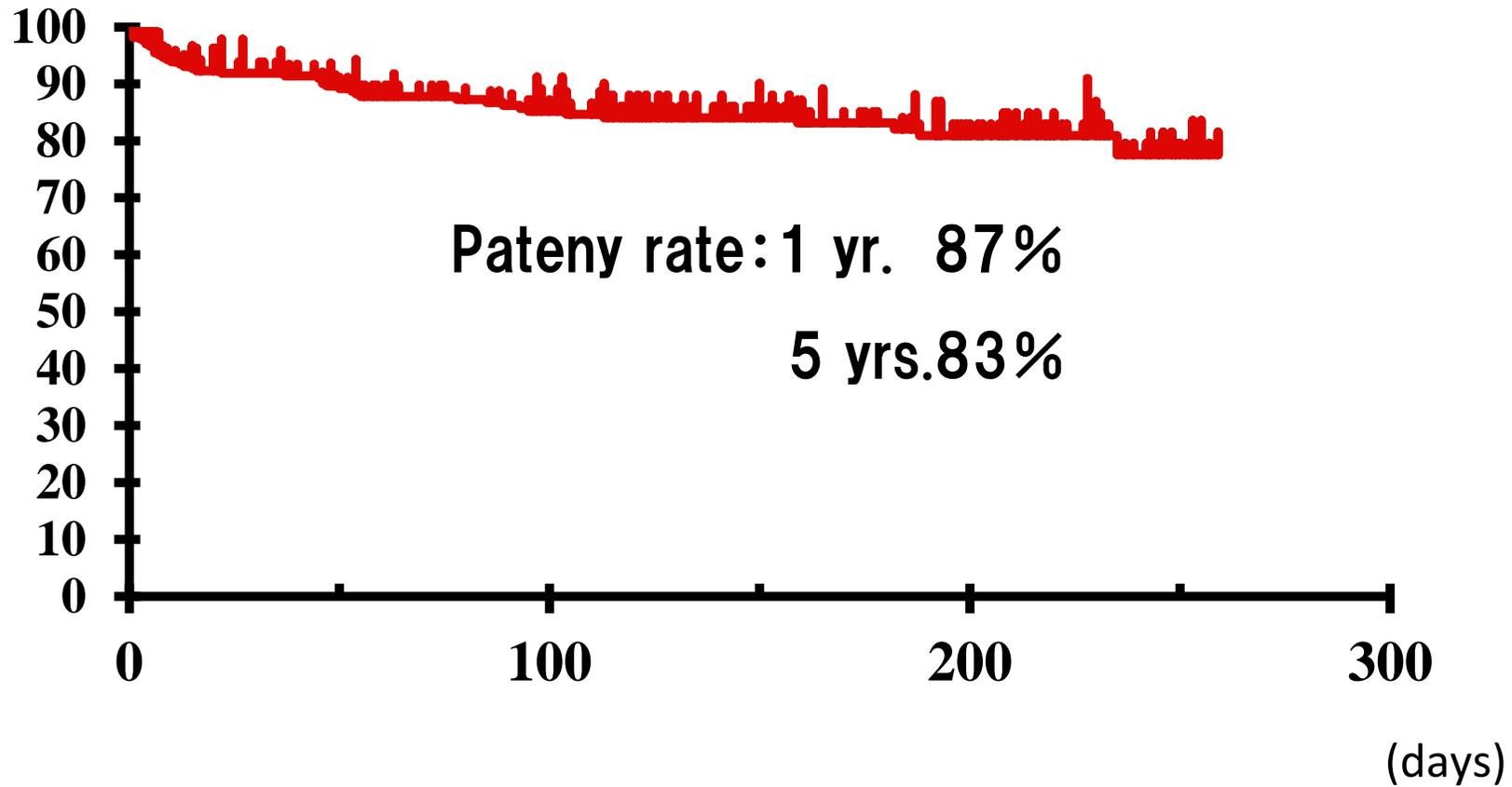


<Dr.T : the mean operating time 3 years >



〈Secondary patency〉

Re-creation 34 pat.(total 270)



Kaplan-Meier method

Major Trouble: Excess blood flow (Large shunt)

State the shunt vein has been extended to bump-like



Excess blood flow is

Shunt blood flow rate is 1000 ~ 1500 mL / min or more, or more than 20% of the state of the entire cardiac output

* When the blood flow increase is sustained cause of heart failure.

Method of Symptoms and Diagnosis

- Palpitation, shortness of breath, Tightness of the chest, Angina symptom
- Increased blood pressure, pulse increase
- shunt vein is extended to bump-like and soft.
- Thrill and a shunt sound large.

Method of treatment

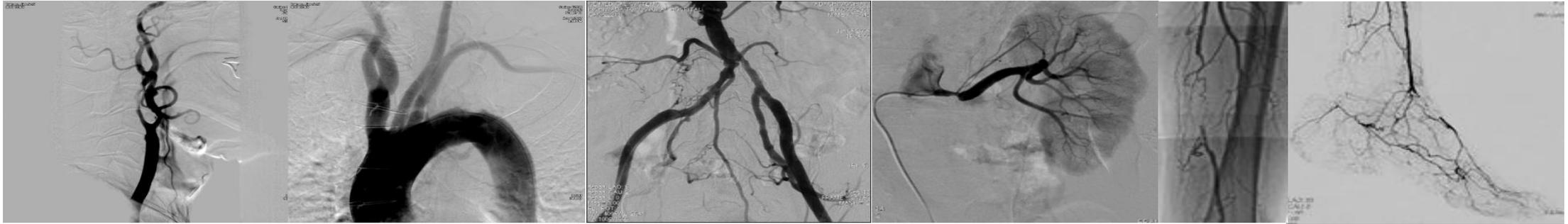
- Control of body weight and blood pressure, moderate exercise, diet, Drug therapy
- Banding surgery, inter position

A point of management

Because there may be no symptoms in the patient, be aware of the soft lump-like extension.

<Conclusion>

- #1 Using parachute technique to achieve AVF.
- #2 Nephrologist can perform this technique after about 6 months of training.
- #3 Surgery time is dependent on skill.
- #4 Secondary patency of 83% after 5 years.
(Fukuoka Red Cross Hospital)
- #5 Using this suturing technique prevents excess blood flow complications



Thank you for your attention

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