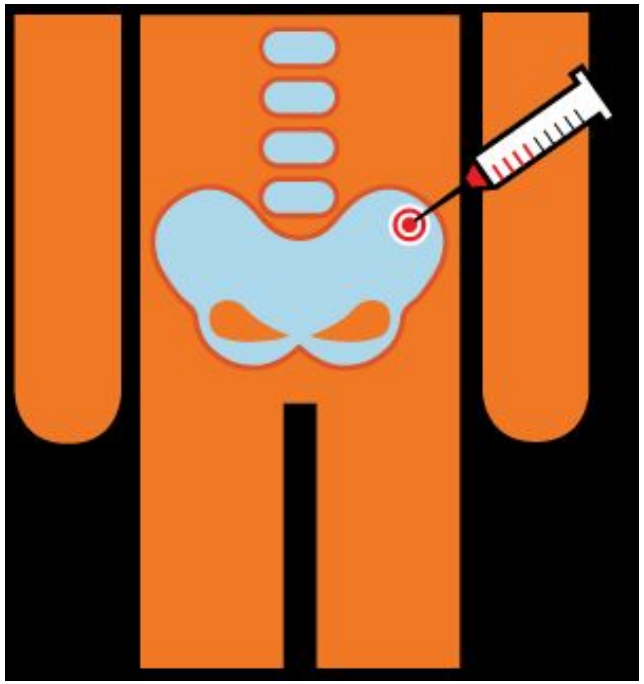
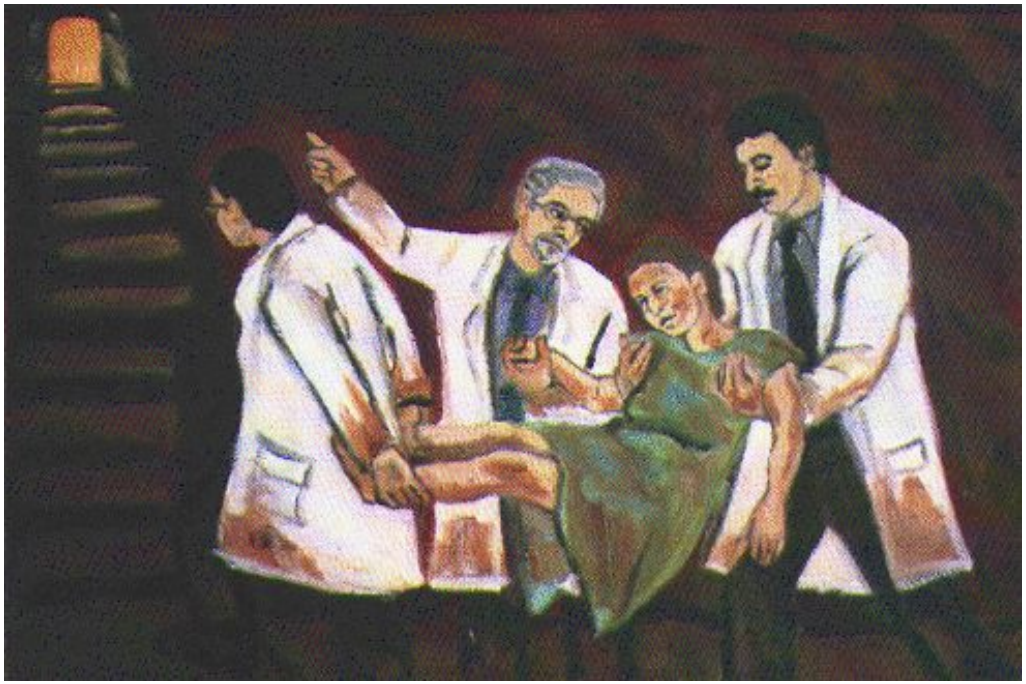
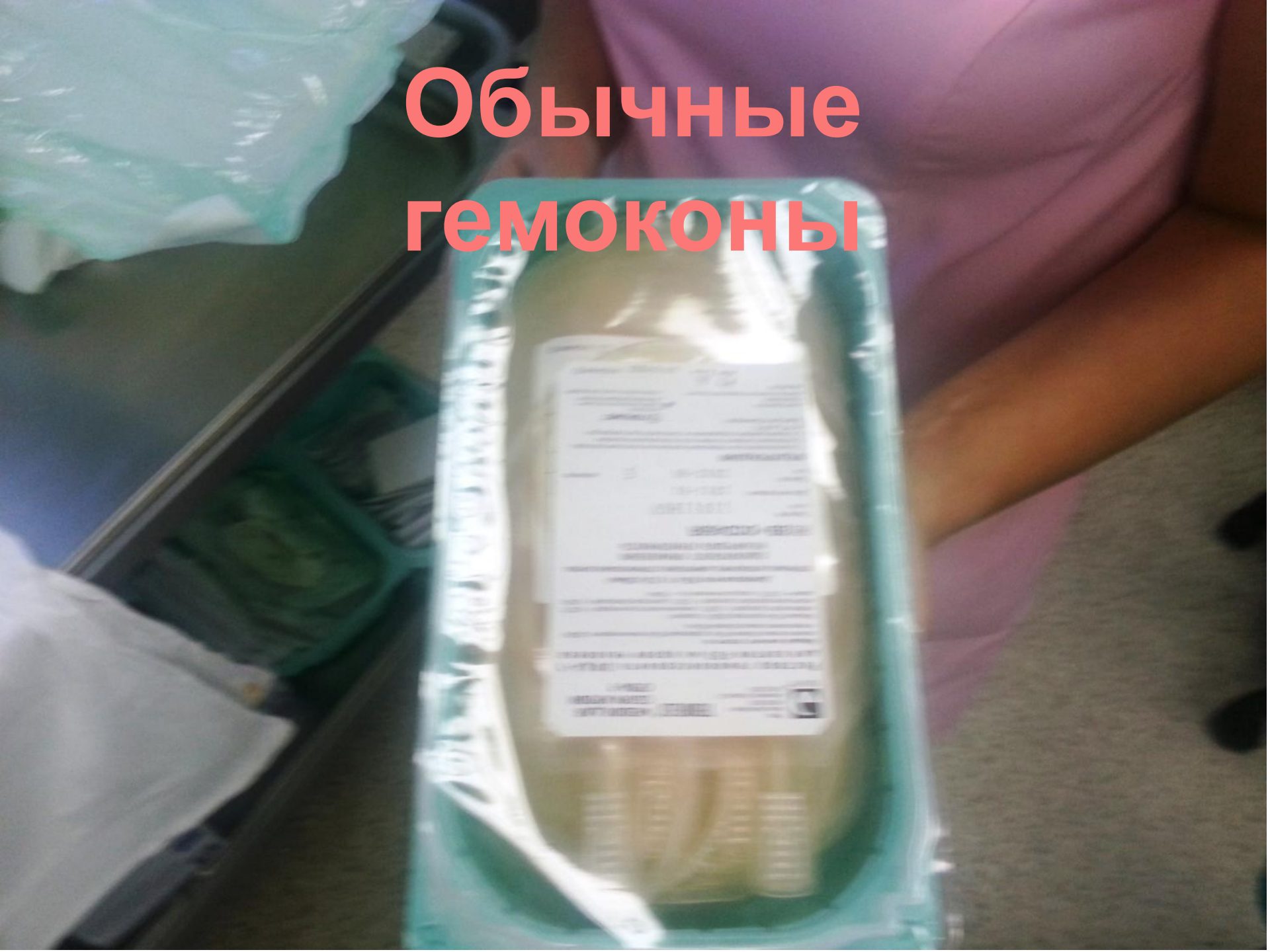
МИЕЛОЭКСФУЗИЯ



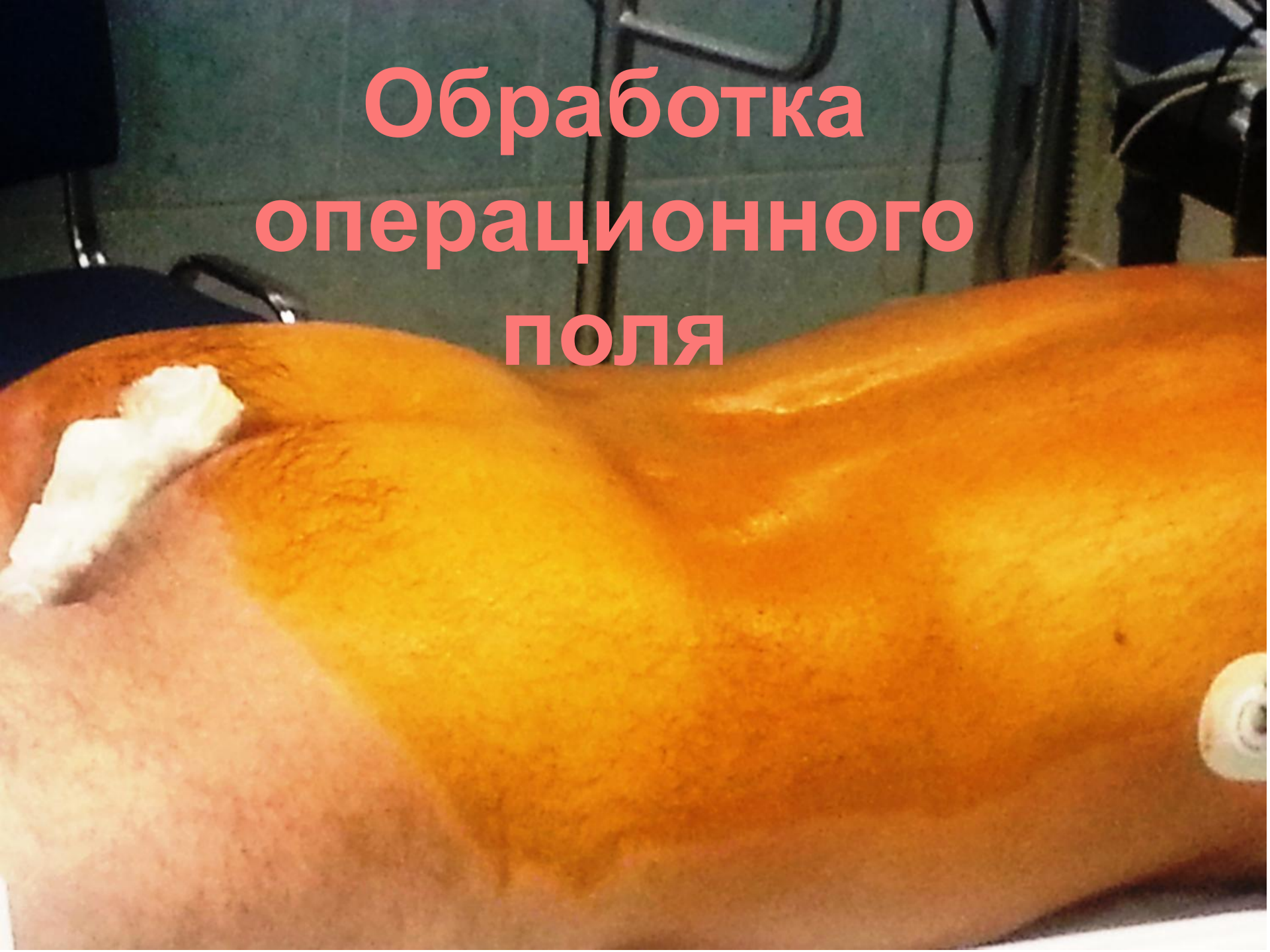


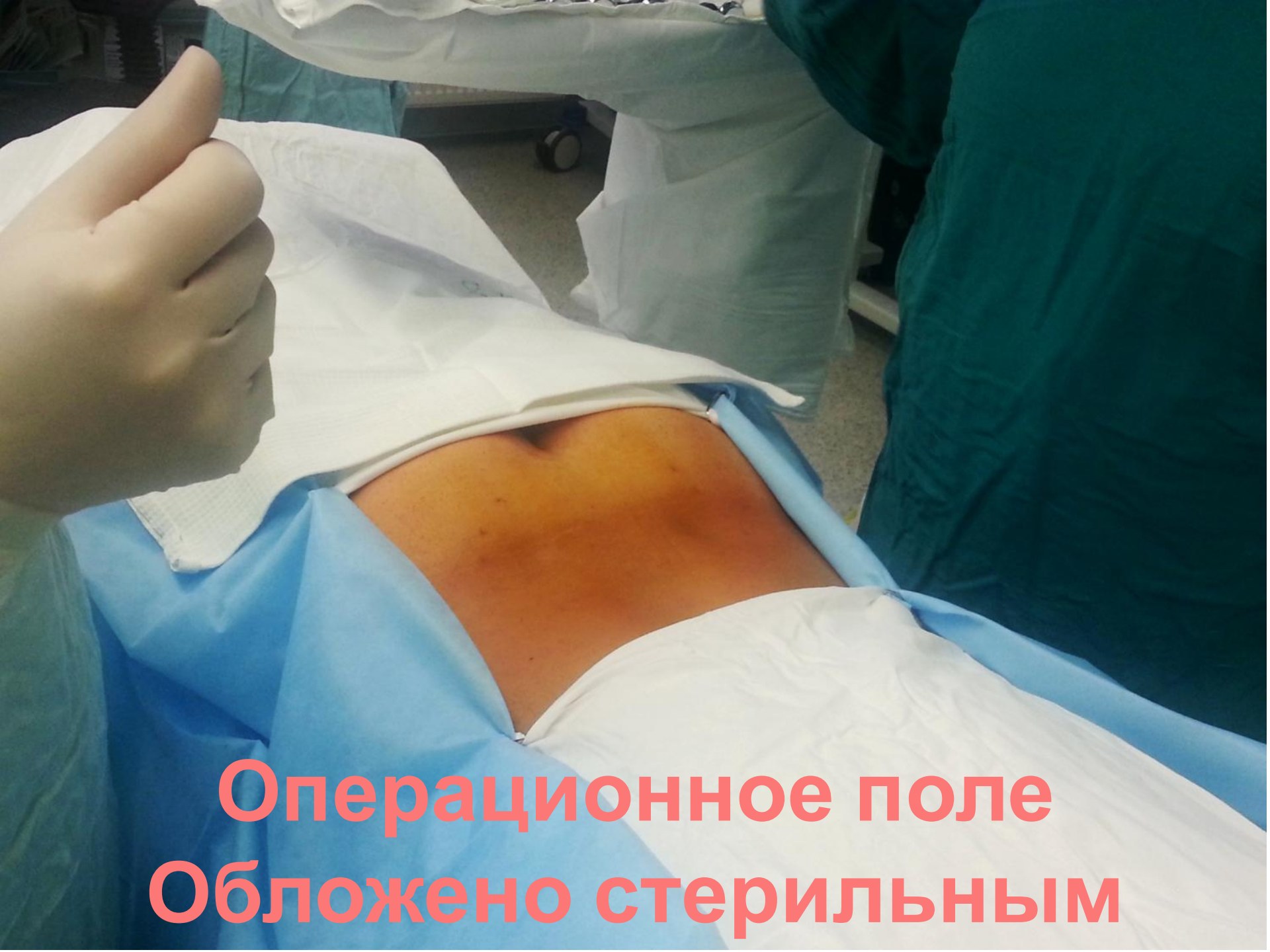

4 Иглы
4 шприца на 22
мл

Обычные гемоконы

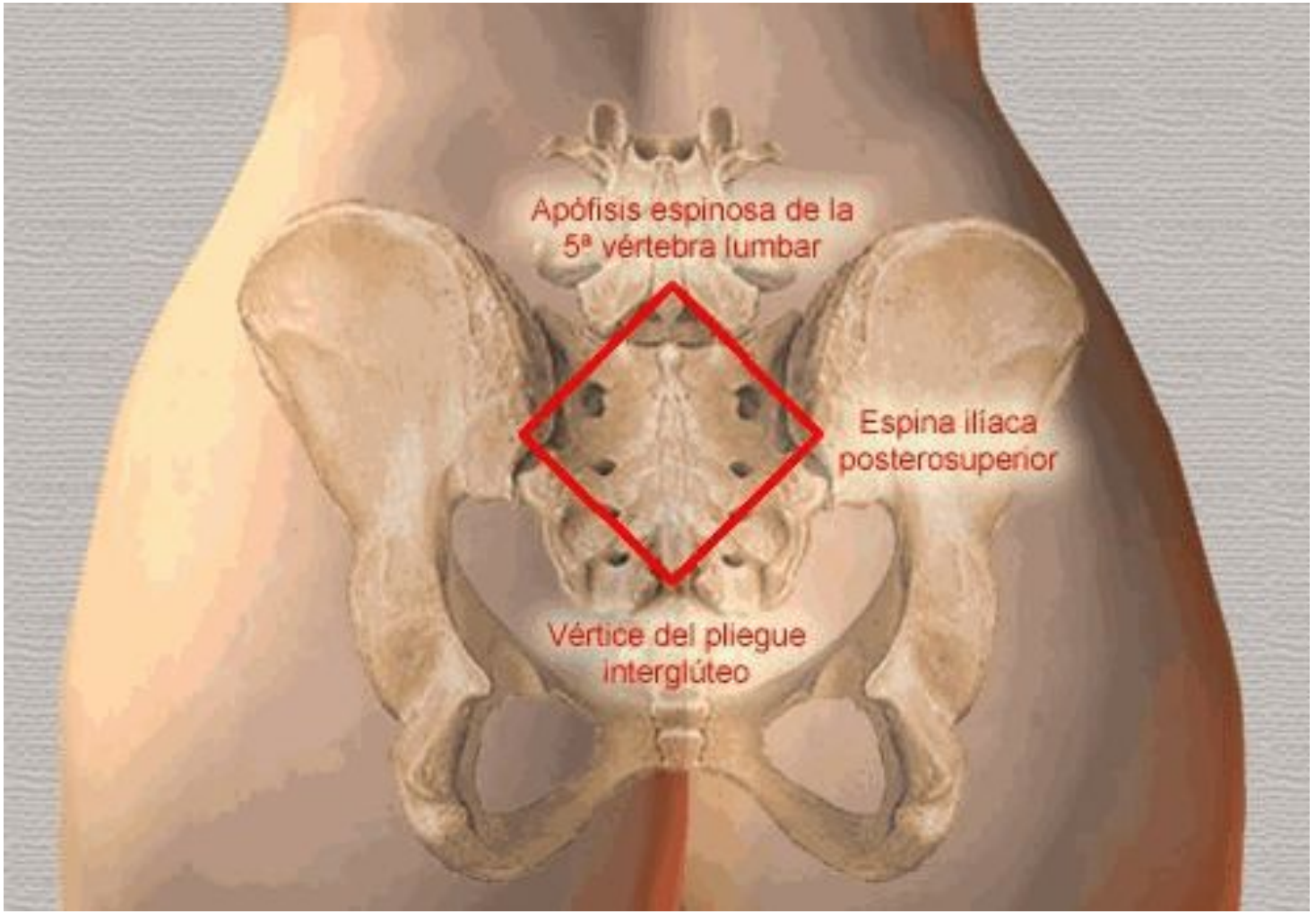


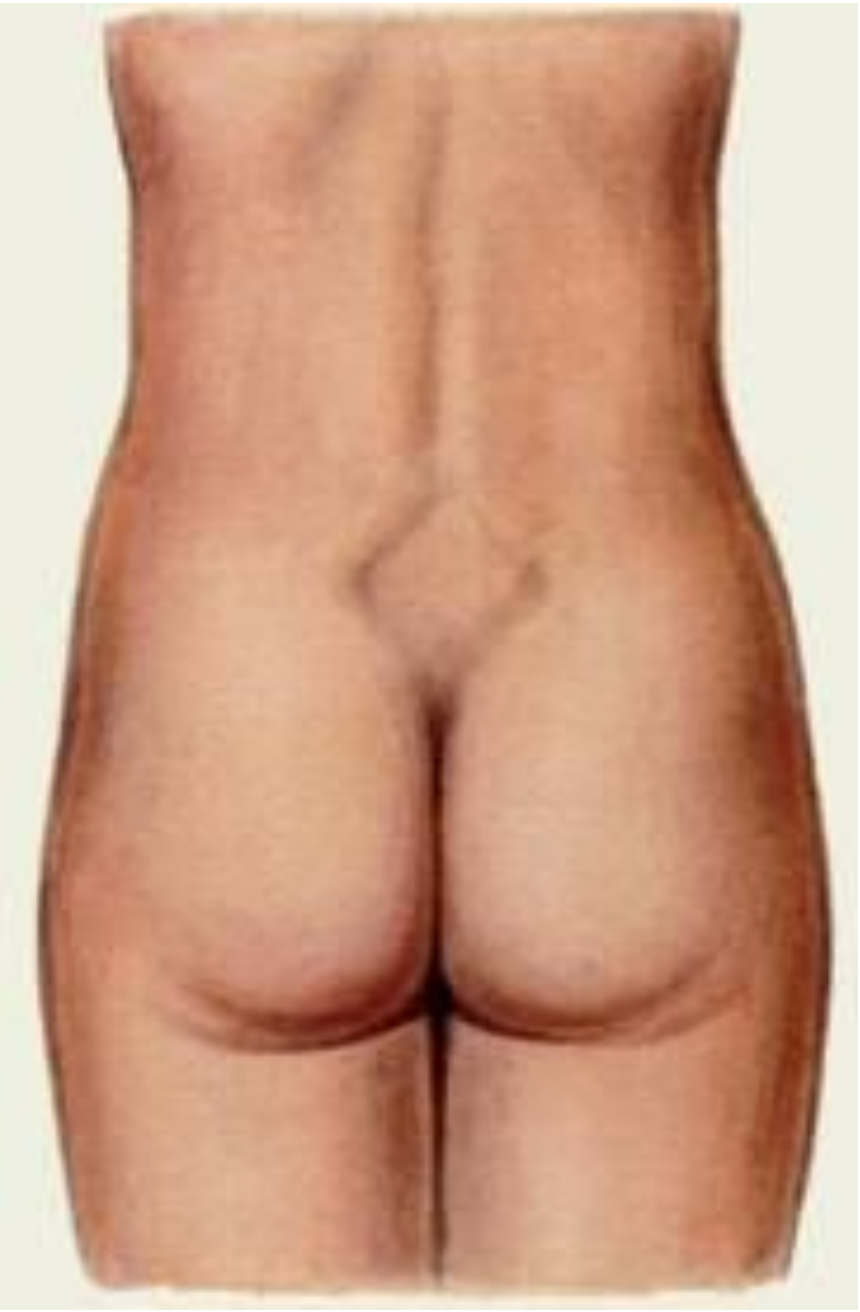
Важный

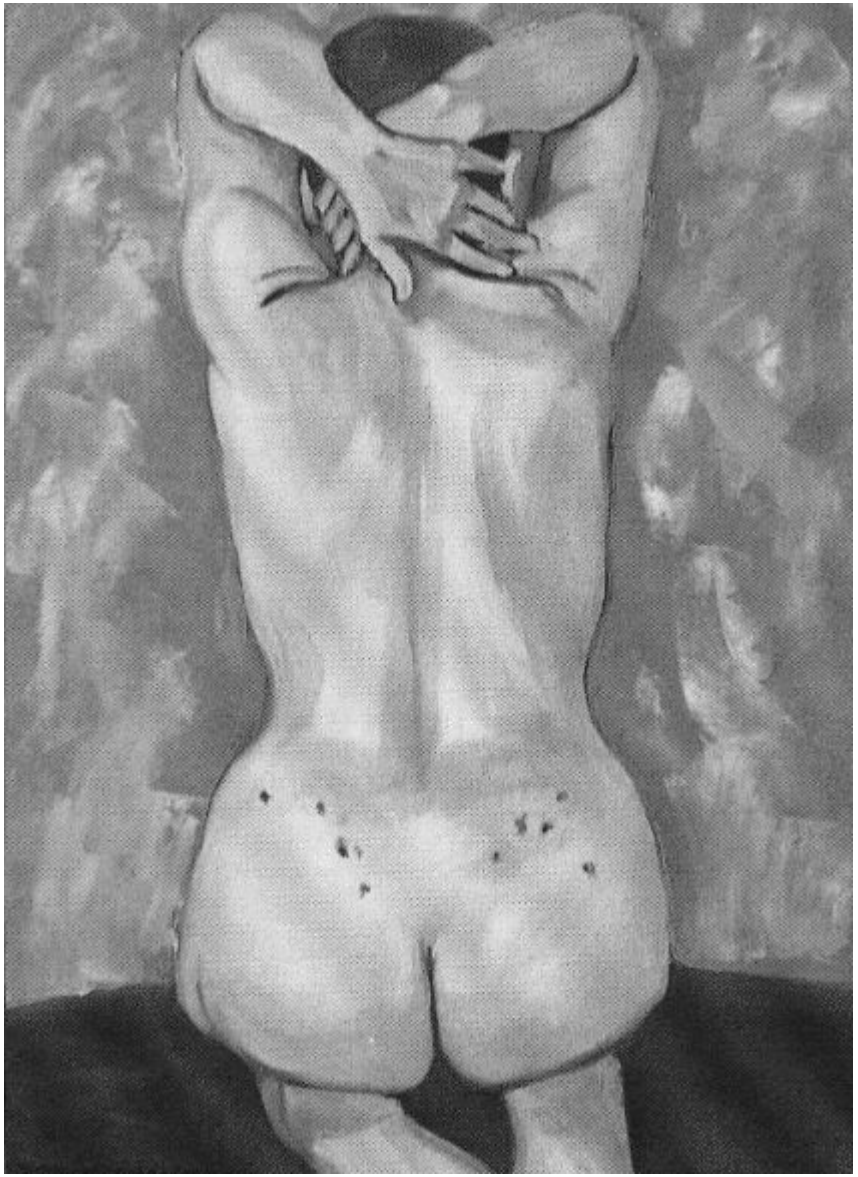

Обработка операционного поля


Операционное поле
Обложено стерильным

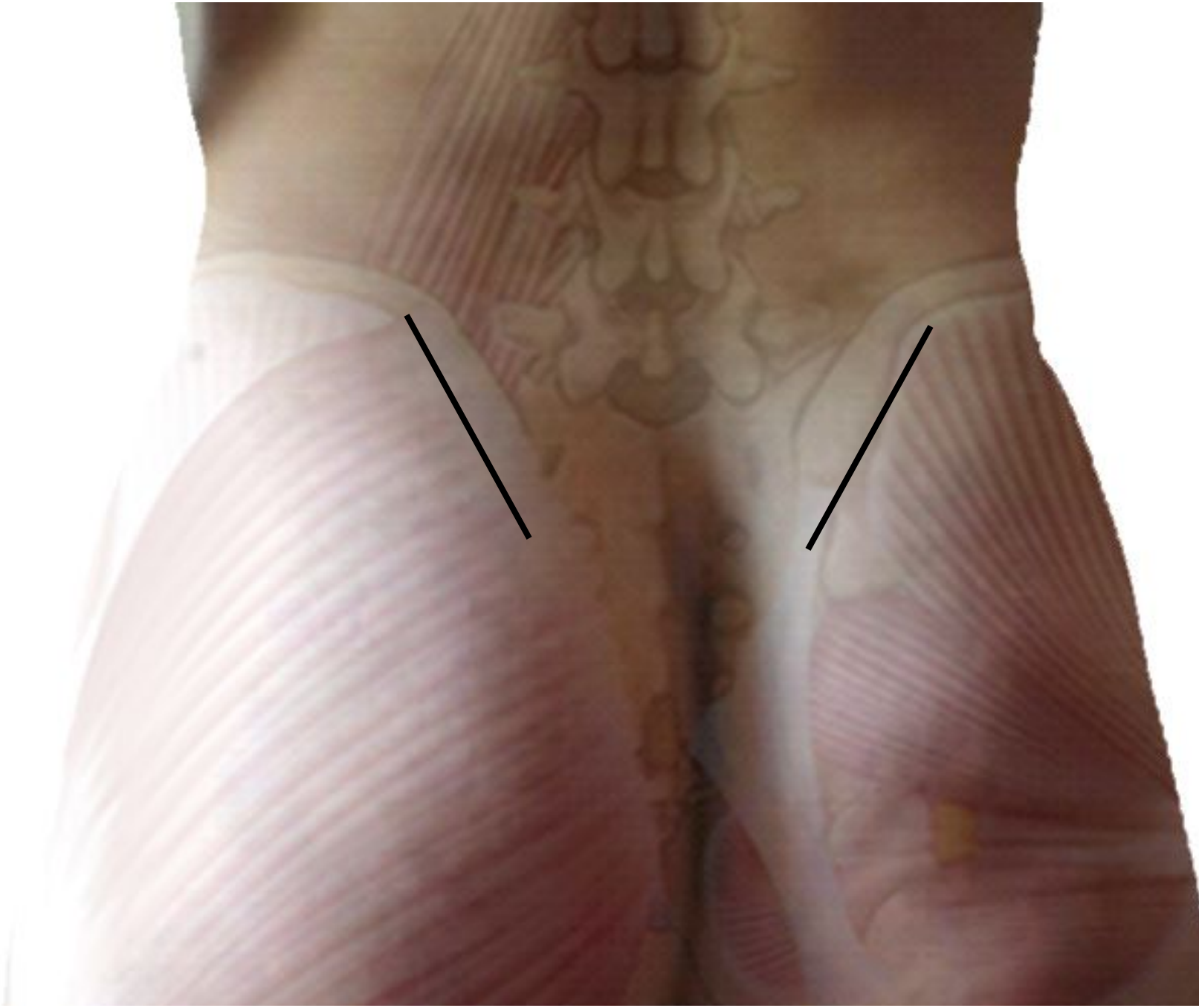
Ромб Михаэлиса







Где




Работает 4
человека


и
анестезиологи
Dräger
Fabius GS

РАСЧЕТЫ (гепарин)

- Общий объем костного мозга 15-18-20 мл/кг массы тела реципиента;
- Рабочий раствор: Гепарин 25 000 Ед на 500 мл физ. р-ра (концентрация 50 ед/мл)
- В шприц набирают 4 мл рабочего раствора (=200 ед. гепарина);
- Конечная концентрация гепарина 10 ед на 1 мл костного мозга ;
- На одну процедуру уходит 2-3 флакона рабочего раствора.

Количество мешков

m реципиента 70 кг

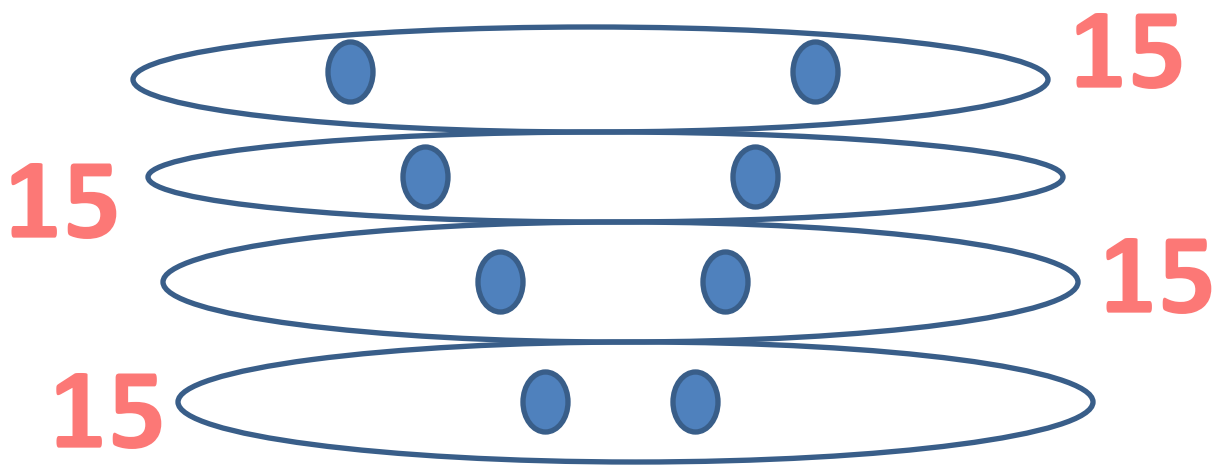
V костного мозга = 18х70=1260 мл

Общий объем с учетом добавления рефортана = 1575 мл (соотношение рефортан: костный мозг = 1:4)

1575 мл = 3,5 гемакона по 450 мл = 4 гемакона

Количество пункций

- В один гемакон на 450 мл набирают 330 мл костно-мозговой взвеси = 15 шприцов по 22 мл (4 мл рабочего раствора + 18 мл костного мозга)



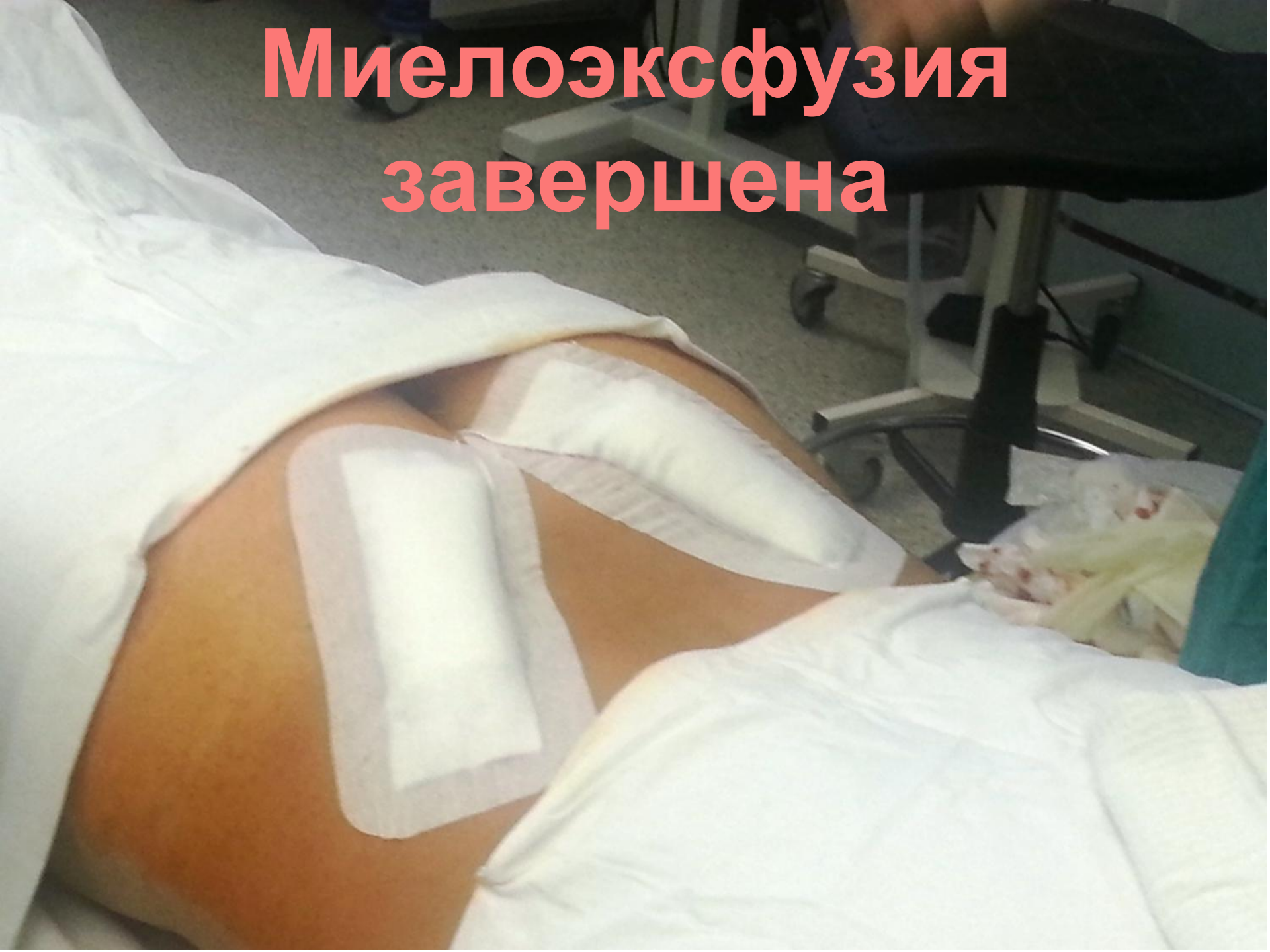
ИТОГО 60

Как пунктируют

- Из 4-х проколов кожи с каждой стороны (итого 8 проколов)
- Из одного прокола кости максимум набирают 2 раза на разной глубине;
- После каждого прокола кости меняют иглу

Cobifix adapter
Record ->Luer


450 мл
BB•DCD456R
М Е Ш О К
ДЛЯ ВЗЯТИЯ КРОВИ
(С Д В О Е Н Н Ы Й)
ЦЕЛЬНАЯ КРОВЬ (ЧЕЛОВЕКА)
СТЕРИЛЬНО. НЕТОКСИЧНО. АПИРОГЕННО
СТЕРИЛИЗОВАНО ПАРОМ
Фамилия и номер донора
Группа крови АВО и Rh-фактор
ВИЧ тест
Серология
Использовать
Собрано и
Партия №
TERUMO
TERUMO CORPORATION, TOKYO, JAPAN
TERUMO EUROPE N.V., 3001 LEUVEN, BELGIUM


Миелоэксфузия
завершена

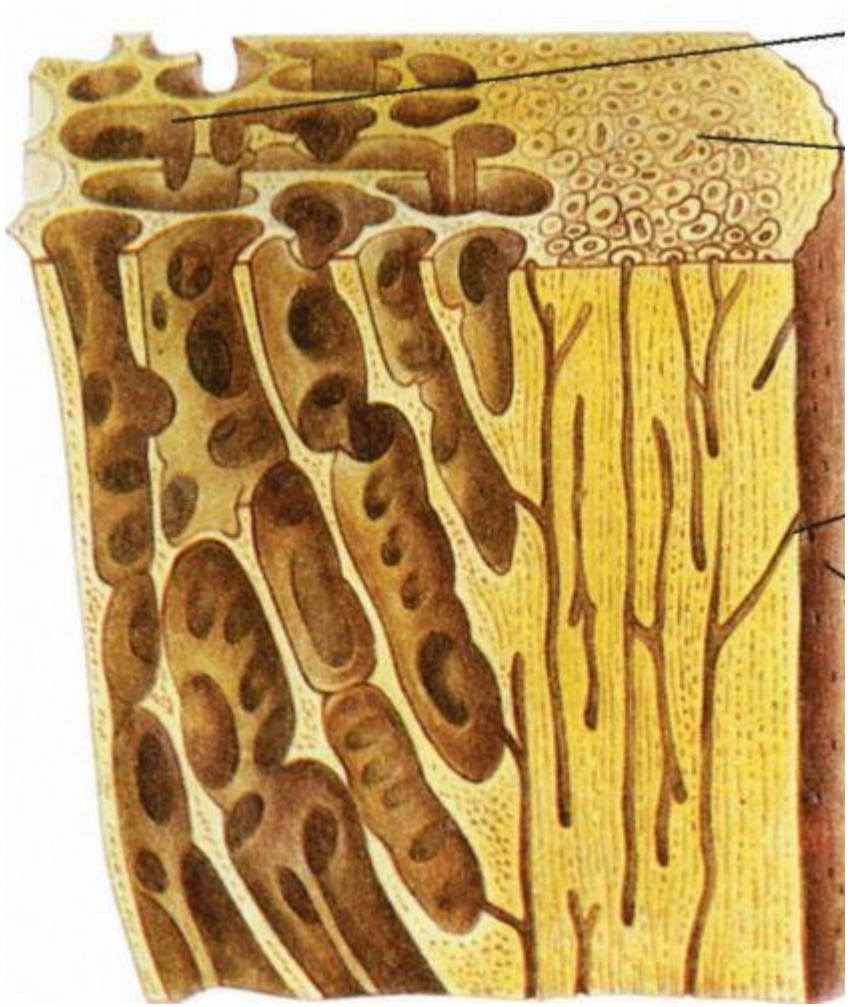

гостиница
Балтийская Звезда

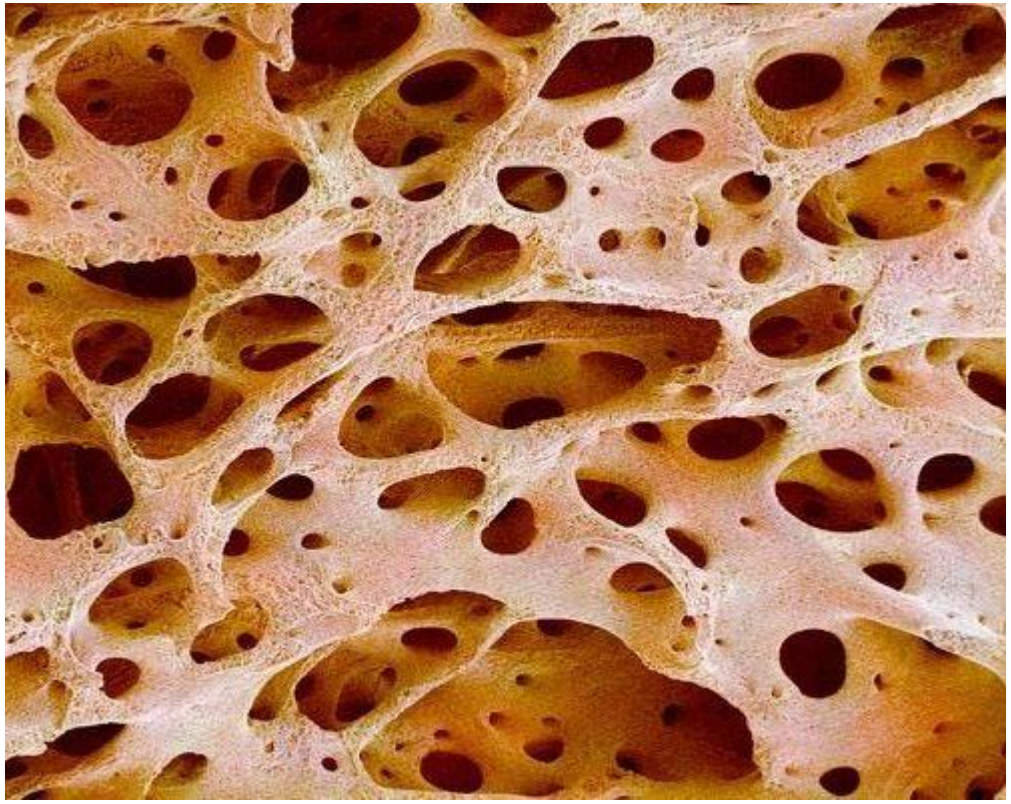
Миелоэксфузия: модификация

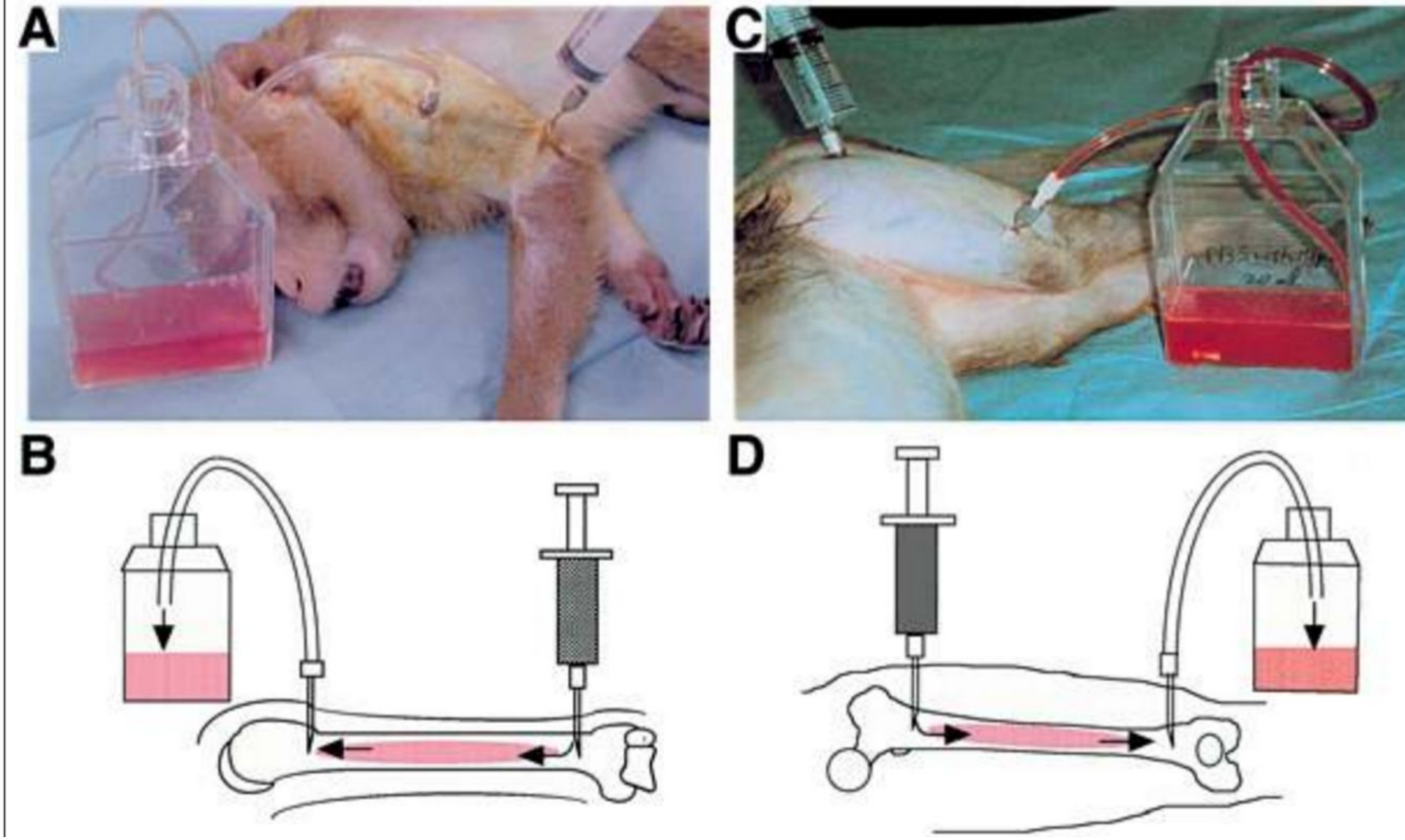
Астана, 30.12.2015

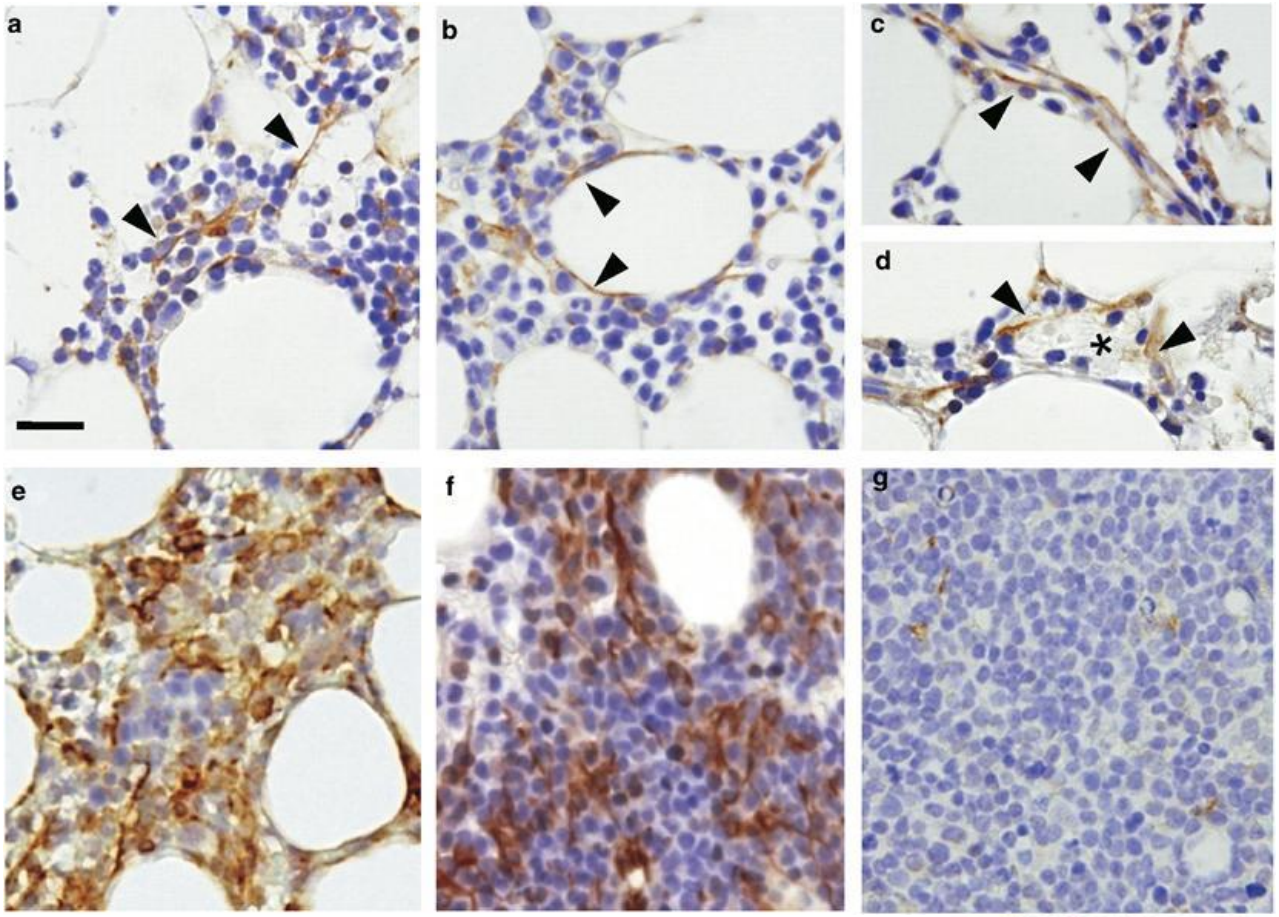
Bone marrow aspiration

Предпосылки

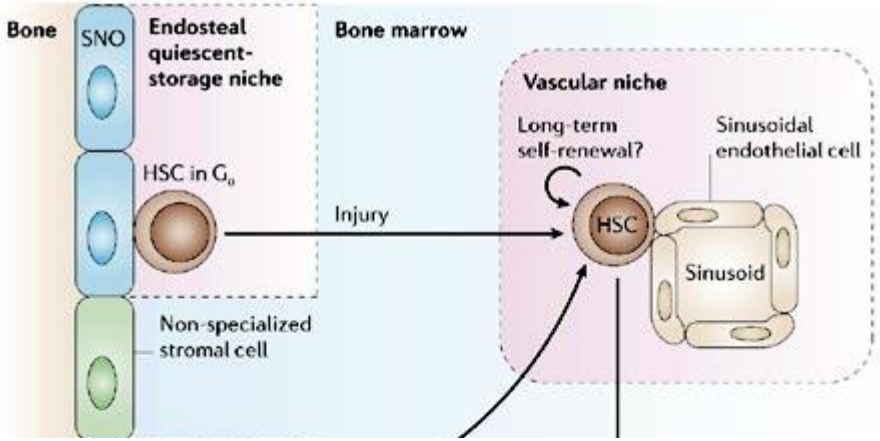


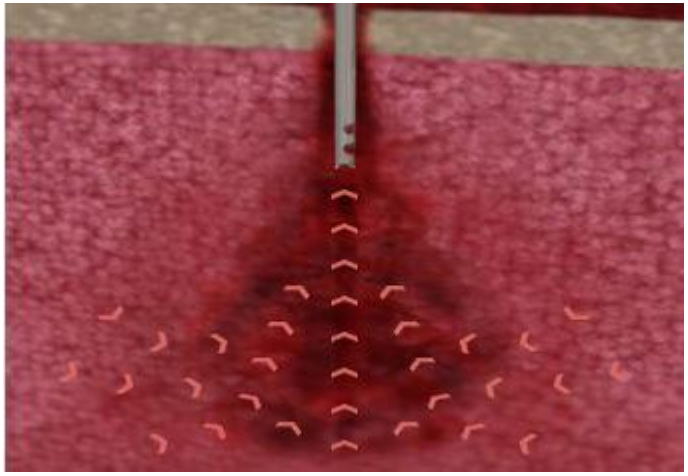



A
C
B
D

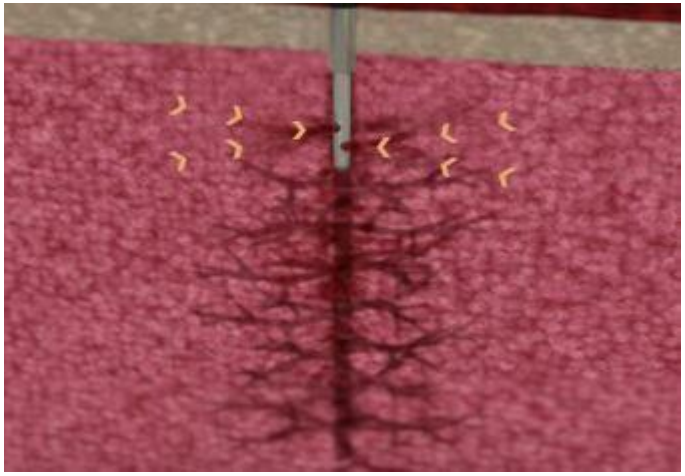


Representative images of CXCL12+ cells in bone marrow samples. Scale bar indicates 25 μm. (a–d) CXCL12+ cells in control bone marrow. Arrowheads indicate CXCL12+ cells (brown). CXCL12+ cells are located among hematopoietic cells (a), around adipocytes (b), and in the perivascular area together with capillaries (c) or sinusoids (d). Asterisk indicates the lumen of the sinusoid. (e–g) CXCL12+ cells in myelodysplastic syndrome (MDS) (e), acute myelogenous leukemia with myelodysplasia-related changes (AML-MRC) (f), and AML, not otherwise specified (AML-NOS) (g) bone marrows. Note that CXCL12+ cells increased in MDS and AML-MRC bone marrow, but were scarce in AML-NOS bone marrow.





TRADITIONAL NEEDLES produce excess peripheral blood contamination, diminishing cellular yield; thereby requiring additional manipulation steps to achieve the cellular demand necessary for most clinical indications.



MARROW CELLUTION™ uses its patent pending technology to harvest high quality stem and progenitor cells from various levels within the marrow space, while limiting peripheral blood contamination.

J-STYLE NEEDLE TIP

I-STYLE NEEDLE TIP

- Bone Marrow Transplant. 1992 Jun;9(6):467-70.
- **Bone marrow harvest for marrow transplantation: effect of multiple small (2 ml) or large (20 ml) aspirates.**
- Bacigalupo A[1], Tong J, Podesta M, Piaggio G, Figari O, Colombo P, Sogno G, Tedone E, Moro F, Van Lint MT, et al.
- **Author information**
- **Abstract**
- The aim of this study was to evaluate the yield of nucleated cells and CFU-GM and the T cell composition in bone marrow harvested by means of multiple small (2 ml) or large (20 ml) aspirations. Eleven marrow donors were studied: each donated 1000 ml of bone marrow in two aliquots of 500 ml for an HLA identical sibling transplant. In six cases the first 500 ml were harvested by means of multiple 2 ml aspirations (A) and the second 500 ml by means of 20 ml aspirations (B). In five cases the opposite was done: 20 ml aspirates first (C) and 2 ml afterwards (D). From each 500 ml aliquot a sample was taken for enumeration of nucleated cells and CD3+ lymphocytes and for CFU-GM growth. Small volume aspirations (groups A and D) yielded more nucleated cells ($p = 0.02$), more CFU-GM ($p = 0.03$) and fewer CD3+ cells ($p = 0.1$) when compared with large volume aspirations (groups B and C). This study shows that marrow harvesting by means of multiple small volume aspirations minimizes the dilution with peripheral blood and results in greater numbers of cells and hemopoietic progenitors.

- Biol Blood Marrow Transplant. 2011 Mar;17(3):351-5. doi: 10.1016/j.bbmt.2010.05.013. Epub 2010 May 27.
- **The effect of different harvest strategies on the nucleated cell yields of bone marrow collection.**
- Wang TF[1], Chu SC, Chen SH, Huang KP, Su YC, Li DK, Shyr MH, Chang CY, Tsai HH, Kao RH.
- **Author information**
- **Abstract**
- To improve bone marrow (BM) harvest of the volunteer donors in our institute, we changed from the single-hole needle to the multi-side-hole needle after March 2002, and examined the midway total nucleated cell (TNC) counts during collection after September 2004. The aims of this retrospective study were to evaluate BM harvest yields obtained through different strategies and to examine the correlation between final and midway BM harvests. The distribution of BM harvesting by different strategies was 235 donors with single-hole needles (group A), 389 donors with 5-side-hole needles (group B), and 365 donors with 5-side-hole needles and midway TNC counts (group C). The nucleated cell density of the collected BM was significantly improved by modifying the harvest strategy (0.202 × 10(8)/mL in group A, 0.219 × 10(8)/mL in group B, and 0.250 × 10(8)/mL in group C; P < .001). The percentage of unacceptable TNC dose (<2 × 10(8)/kg) was also decreased in all 3 groups (to 5.9%, 3.6%, and 0%, respectively; P < .001). Multiple regression analysis revealed that donor weight, white blood cell count, and harvest strategy were positively correlated with BM TNC density (P < .001), whereas harvested BM volume was negatively correlated with TNC density (P < .001). On linear regression analysis, highly significant correlations were noted between midway and final TNC densities (r = 0.8774; P < .001) as well as between harvested BM volume and TNC count (r = 0.7937; P < .001). Changing the harvesting needle and checking the midway TNC count improved the harvest outcome.

To reduce the contamination of PB in the harvested BM, the volume of each aspiration was restricted to 5 mL with the single-hole needle and 30 mL with the multi–side-hole needle.