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Case Report

Limbs' Simple and Combined Arterial Traumas

Healthcare

Keywords: arterial trauma,hemoragia, arteriography, by pass, autotransplant, venos graft.

Petraq Mustaqe		**Surgeon at Regional Hospital of Vlore Albania**
Leonard Sinani		**Orthoped at Regional Hospital of Vlore Albania**
Faslli Haxhiaj		**Intensive care doctor of Regional Hospital of Vlore Albania**

Abstract

This work is about some practical and real interventions carried out at the Regional Hospital of Vlora in the field of limb vessel traumas, as well as of combined traumas related to neurological and orthopedic limb injuries. Such interventions are necessary to provide first aid to the traumatized patients, who may be at risk of life due to hemorrhage, or if the transport to specialized clinics may present serious life risks, or if there is presence of a certain extreme situation.

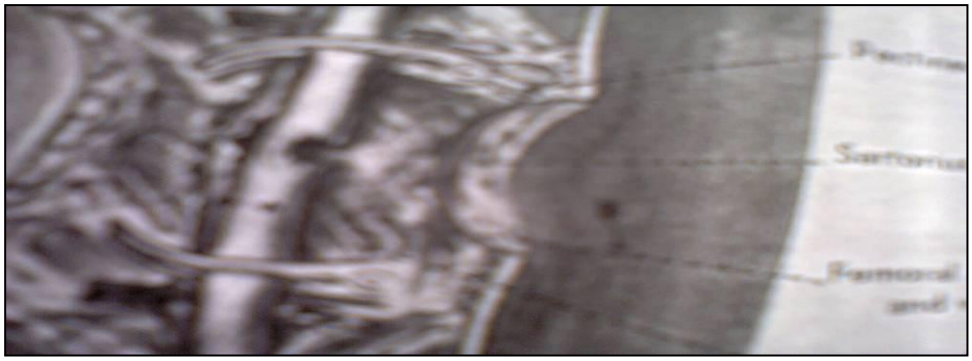
Since 1998, in our clinical practice we have tried to treat limb vascular traumas at the regional hospital of Vlora thanks to the experience gained through a brief annual training course at one of the most prominent university hospitals of Athens in Greece.

So, we started to practice and dealt with the following cases:

The first case was that of a right arm and elbow trauma caused by a rifle shot, where the patient R. J. – a 23 years old man – appeared with serious injuries to the muscles, skin and bone at the *cubiti dexter art.* as well as brachial art. rupture over its bifurcation. The patient underwent an emergent intervention as well as restoration of arterial circulation continuity and restoration of osseous stability in semi-flexion position to ensure vessel stability at that difficult position…We took great saphenous vein and we reversely sutured both ruptured extremities, whose proximal and distal edges were refreshed. Once the bone, articulation and heparinized vessel were fixed the muscles were put close together as much as possible in both extremities, and once the arterial circulation was checked we proceeded with the medical treatment for two weeks. The result of such intervention was that the arm was repaired, although several other interventions were required for the peripheral nerves, which were seriously damaged.

The second case is that of the patient E. D. – 27 years from Vlora – with injuries in the left femoral a. with full rupture of articulation at upper 1/3 level of the femur. Once the wound was expanded and full rupture of *a.femoralis* was observed, we took saphenous vein from the other leg, a tube of approximately 5 cm, inverted the direction and refreshed the damaged edges, we sutured both extremities and once the air was extracted and ruptured extremities heparinized, we checked if circulation was fully restored.

Following a 4-days treatment the patients is discharged, operation wound healed per primam, and continues medical treatment with antibiotics and fraxiparine in 4000 ui/die doses.



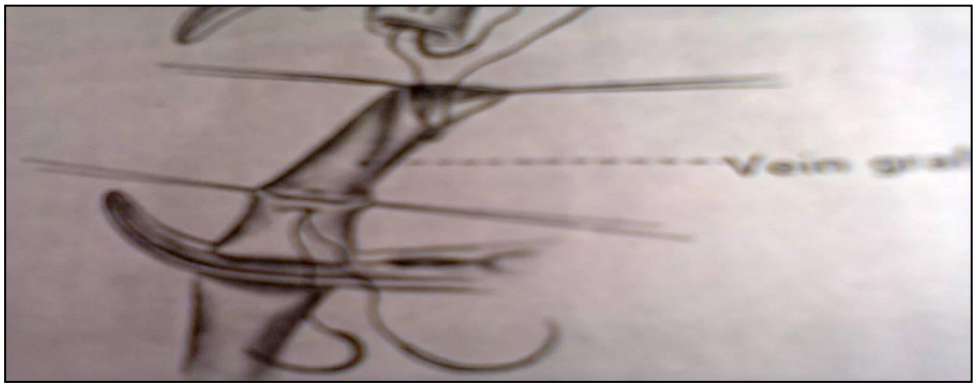
Scheme Nr.1

All this work has been carried out not only by the writer, but also by all surgeons, othopeds and reanimators of regional hospital of Vlora, as well as by the devoted nursing staff.

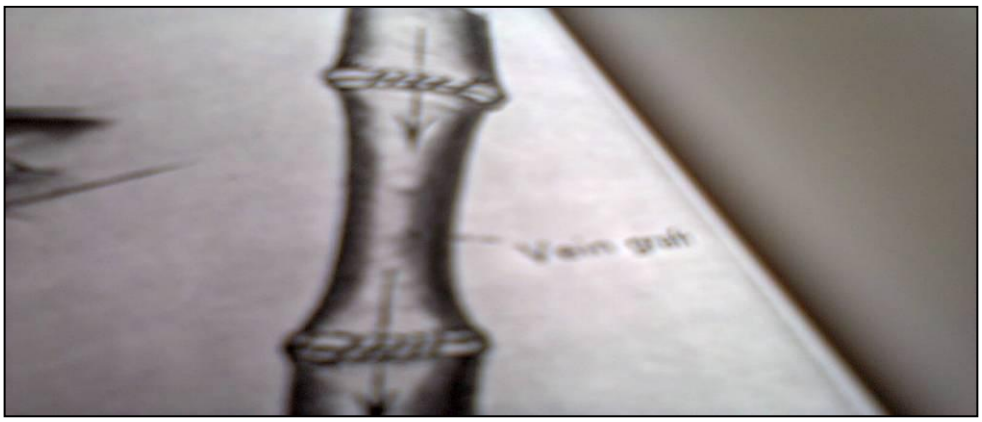
While dealing with such emergent cases, we based our work on the physiopathological theory of Barro d'sa AAB presented below.

Physiopathology of arterial trauma according to Barro D'sa AAB "Shunting in lower limb vascular trauma' by Emergency vascular surgery 1992 Sandrs et Co. pgs. 331-343

a. Arterial trauma – arterial closing – reduction of tissue perfusions – tissue hypoxia, anoxia – muscular cel. necrosis – amputation.
b. Arterial trauma – hemorrhage – hypotension – shock – acute renal insufficience



Scheme Nr.2



Scheme Nr.3. Restauration with vein graft

Our practice consisted in:

- Wide operational area, full cleaning and disinfection
- Immediate clamping of arterial vessels with vascular clamps or plaster
- Careful reviewing of any hematoma
- Full implementation of homeostasis
- Injection to each refreshed stub of 1000 ui heparin
- For the auto-transplant we have employed in all cases magna saphenous vein in opposite direction to the venous flux …refer to the following diagram
- For sutures we have used common prolene 5-0
- In two – three recent sutures we have carried out air extraction
- In combined traumas priority was given to restoration of arterial circulation and then to osseous stabilization of nerve sutures
- Hemotransfusion in cases of hemorrhagic shock
- Therapy with antibiotics has been regularly used.

Disussion and Results

Our works is mainly focused on determining an accurate diagnosis, based on the anamnesis, clinics and objective examination of the traumatized patient. Pulsating hemorrhage, serious shock condition, heavy paleness, presence of wound, distally palpation pulse and finally doppler examination have been sufficient in determining the diagnosis.

Due to contrast matter and other necessary appliances, we have not been able to perform arteriography and this is a disadvantage to our work.

This has resulted in giving a solution – even a final one – to the patients before they are transferred to the traumatology ward; otherwise the risk of significant blood loss due to transport has been reduces…

We have eliminated amputations, which have been pretty frequent in recent past. In all cases we have been able to save 100% of limbs at risk.

The debate on whether to use auto-transplant or synthetic vessels is a matter of personal opinions. Surely, the synthetic vessel would save time – at least 20-30 min.

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