Prosthetic Axillobifemoral or Axillo-iliac Bypass Under the Muscle at the Inguinal and Abdominal Area to Avoid Infection

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Objectives: The basic technique is very vulnerable for prosthetic infection. One important reason for infections is subcutaneous tunneling, which can be avoided by following new technique.

Methods:
The treatment starts with an oblique incision and exposure of the preperitoneal space and the external iliac artery at the same side as the axillary anastomosis.

The tunneling starts from the axillary level beneath the pectoralis major muscle over the ribs. After the lowest rib the tunnel goes through the muscles and fascia of the abdominal wall to the preperitoneal space with hand support from oblique incision or small opening to the abdominal wall muscles and fascia with a long surgical Crawford clamp. Skin incision under the rib should be avoided.

Above the external iliac artery the tunnel continues to the opened femoral area underneath the inguinal ligament. Cross-over tunnel from obliques incision is made by fingers over the bladder to the other side to femoral area under the inguinal ligament. Sometimes there is also a need for an oblique incision to the both sides when there is a scar or firm tissue in the area.

At the femoral area a rotational sartorius muscle flap covering the prosthesis is recommended or make distal anastamosis to the external iliac artery when possible.

Results:
In our hospital five patients have been treated since 2014. All patients had a smoking history and they suffered from CLI and have history of vascular surgery at the femoral vessels.

None of the patients have amputations or prosthetic infections mean follow up three years. Blood loss was less than 500 ml in all cases and the operation time was between 3 – 4.5 hours. Additional treatments were six sartorius muscle flaps, six femoral endarterectomies and one femoropopliteal bypass. One anastomosis was done to the external iliac artery and nine to the common femoral artery.

Conclusions:
By using this new technique in axillobifemoral or axilloiliac bypasses it is possible to place the vascular prosthesis under the muscle and consequently decrease the risk for prosthetic infection. The early experience is promising.

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