Possibility and predictors of surgical salvage of infected mature arteriovenous fistula for hemodialysis

Background
Infection in arteriovenous fistula (AVF) is a common complication in patients with end-stage renal disease (ESRD) requiring dialysis. The standard management includes ligation of the AVF to prevent the progression of septicemia. Till now, there is limited evidence on the effectiveness and possibility of salvage of infected AVFs.
Aim
To evaluate the effectiveness and safety of salvage of infected mature autogenous AVF.
Methods
This prospective study was conducted at the Fayoum University Hospital from September 2015 to April 2023. We included patients with dysfunctional and functioning infected AVF. Patients with infected synthetic grafts and immature infected AVFs were excluded. We aimed to excise the infected part of the vein wall and surrounding tissues to restore fistula patent and functioning after direct vein repair. We followed-up with all patients for 1 year and examined the repaired AVFs for patency and the possibility of re-infection. Tissue cultures were obtained to identify the commonest responsible organism and the recommended antibiotics.
Results
A total of 46 patients with infected AVFs were included. At the end of the follow-up period, 11 patients were ligated, and 35 underwent AVF salvage procedures. 19 cases experienced some complications: 5 cases had hematoma required surgical intervention, 2 cases had hematoma managed conservatively, 2 patients had wound dehiscence, 3 patients required hybrid angioplasty for acute failed AVF, and 7 cases required angioplasty for failing AVF.
Conclusion
When performed correctly and with expert hands, salvage of infected mature AVFs seems possible with excellent efficacy and high patency for up to 1 year.
Keywords:
dialysis, infected arteriovenous fistula, salvage, surgical repair, vascular access