Case report: Use of Angioseal to close entry point of CVC into subclavain artery 6 days after mistaken insertion.

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Abstract:

Ultrasound guided CVC insertion wsa preformed in the Hematological Oncological ward in a Acute Myeloid Leukemic patient , thrombocytopenic 20,000 , with chronic renal failure and immune system failure in a septic shock state.The CVC was inserted into the RT Subclavien artery. Due to the fragile state of this patient the CVC was left in place [ARTERIAL LINE] for 6 days until his platlet count was elevated and his shock state overcome with antibiotics. The interventional Radiologist removed the CVC with the use of Angioseal device. This case demonstrats that a CVC may be left in place as an arterial line for a number of days until the patient is stabilized and able to undergow a interventional procedure.

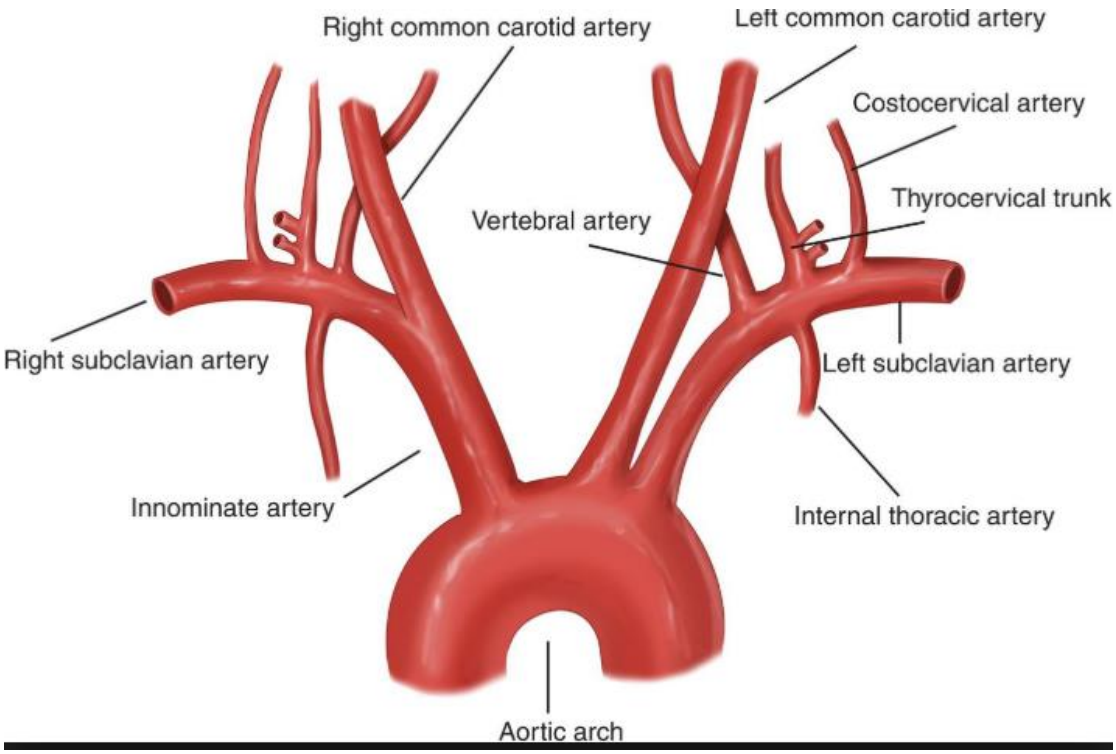
Introduction:

Insertion of a CVC into the Carotid artery or Subclavian artery has been demonstrated in the letriture. This complication can lead to pseudoaneurysm, hemorrhage, pneumothorax, fistula formation and death. Treatment of this complication are decided apon the location of entry point and size of CVC and general state of patient and his blood cloting function. Types of tretment options range from locall pressure on insertion entry point when possible [distal common carotid artery]. In other locations were pressures can not be applied or the patient has coagulation problems surgical repair of the artery has been the mainstay of treatment. Recently angio interventionests have been offering other non surgical possabilities. Angio intervensionests have a number of endovascular opption including: 1-coverd stent on the entry point, 2-ballon inflation oclluding entry site for allowing coagulation, 3- Angioseal closure device. If all endovascular options fail then open surgery with proximal and distal control with entry point suture is an excellent option .

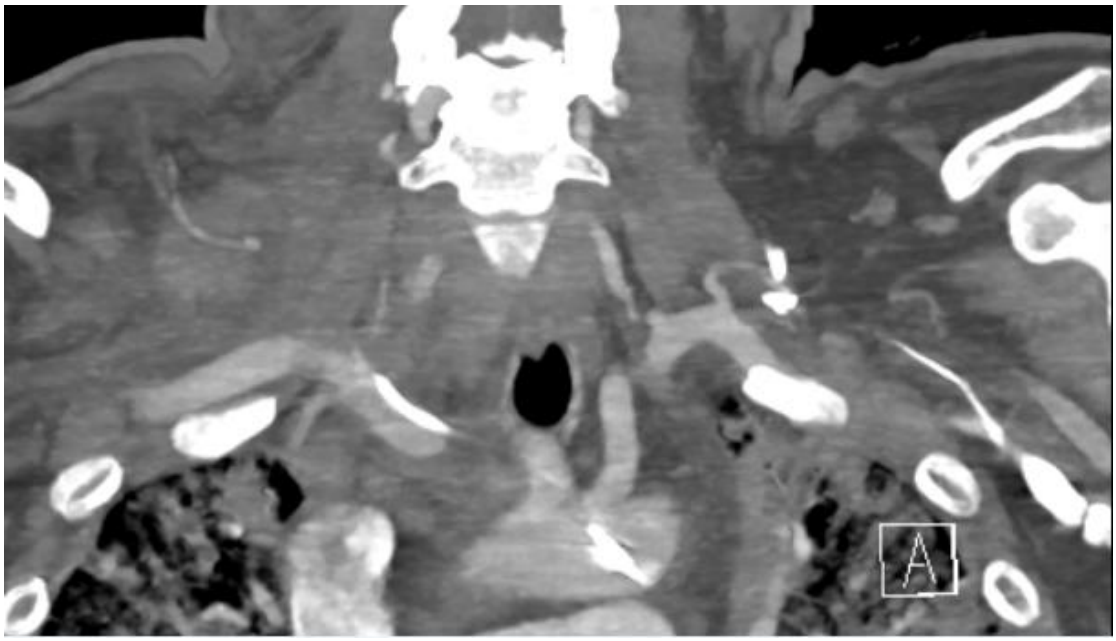
CASE REPORT

A 51 years old male hospitilizid in Hematological Oncolgy due to AML which is not responding to treatment. The patient had a past medical history of malignant melanoma and Bilateral RCC for which he had nephrectomy on one side and partial nephrectomy on the other side. His basic creatinine level is 2.5. Due to sevire sepsis in this paient the piccline was removed due to suspected infection. Due to the septic state of the patient and low blood presure vasopresors where started and a central line catheter was needed. A senior anaestisiologist was called and US guided insertion of a CVC was tried in the RT internal jugular vein. Unfortantly when the CVC was examened arterial blood came out. The CVC was left in place and another CVC was placed in the LT internal jugular vein succesfully. A vascular surgeon was called to asses the situation. A 51 years old male in septic shock with a platlet count of 20000 which has a CVC [triple lumen] with arterial blood in the lower RT neck region. Due to the importance of understanding the exact location and entry point of the CVC , even though renal function in this patient is comprimized with creatinine of 2.5, a CTA of the neck was done which demonstrated that the entry point of the CVC is in the Rt Subclavien Artery.

Normal vascular anatomy of aortic arch.

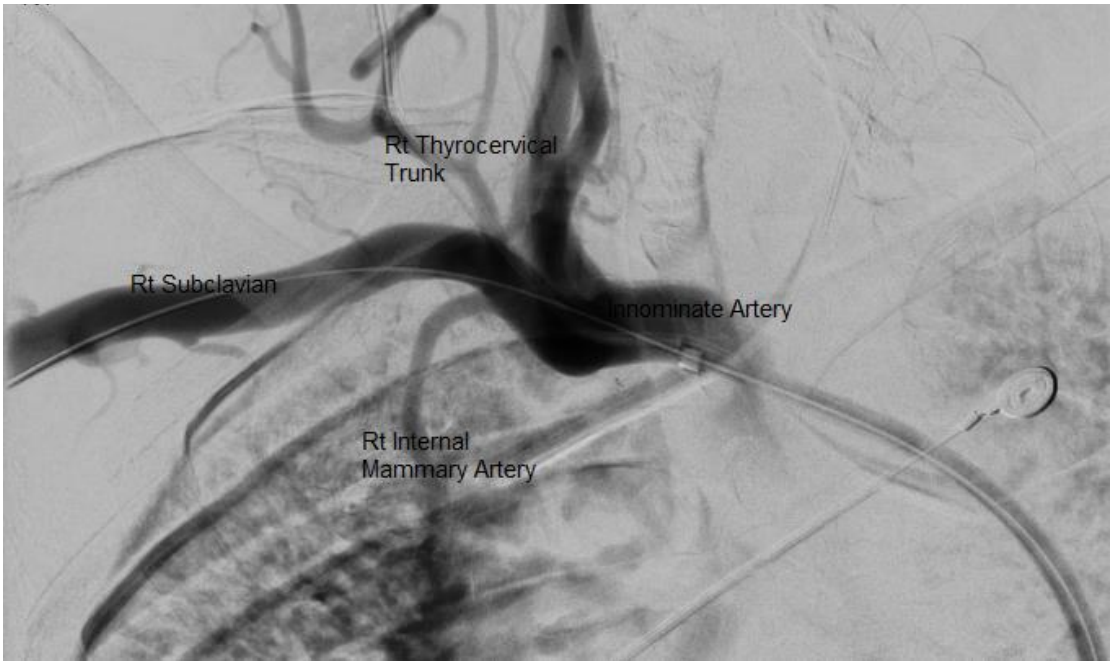


CTA of patient with CVC in Rt Subclavian artery.



CTA of patient with CVC entry point in Rt Subclavian artery.





Due to the unstable septic shock patient and due to low platlet count it was decided not to take any immidiate action surgical\endovascular and to let the hematological staff stabilize the patient. For 6 days the CVC was left in place while hemaological treatments were carried out. eventlly the patient was out of his septic state and platlet count was elevated and allowing endovascular\surgical intervensions.

During this time the vascular surgery and angio team layed a 4 step treatment plan with the 1st option been Angioseal closure device and the 2nd option been stent graft deployment which will close the entry point and also the Rt Thyrocervical trunk.the 3rd option was ballon inflation at the entry point and the 4th bailout option was a ready operating theater with the vascular surgery and cardiac surgery teams ready. Furtently the angioseal 1st option worked and the CVC was succesfully removed. Patient was returned to the hematological ward for further tretment.

DISCUSSION

CVC complication are rare and dangurous complication usually occuring in the most difucalt patients. The tratment of these patients needs to be planed out in order to escape further morbidity and mortality. The objective of this case report is to emphisize the multi diseplinary team needed to treat these complicated patients. There is absalotoly no hurry for the removal of the CVC. Patients needs to be able to undergo all procedures from vascular to surgical.

CONCLUSION

The treatment of arterial injury is evolving from surgical towards endovascular. The timing of removal of a CVC in a artery should not be stressed[not an emergency] and planed for the best possible timing for the patient and the multidiseplanery team.