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Double needle puncture technique to access femoral vein in difficult situation

Nurul Islam

The Mission Hospital, India

Getting vascular access is one of the most important steps for doing cardiac catheterization or any kind of vascular intervention especially in very small kid or in difficult situation. There are lots of techniques described in the literature to get vascular access comfortably. We have done a small study over small pediatric population whom we planned for either diagnostic cardiac cath or cardiac intervention or putting femoral venous central line for medical management especially in extremely preterm babies. The inclusion criteria were: 1) only femoral venous access required, 2) extreme premature baby who were failed in putting central line in NICU by expert intensivist, 3) small baby less than four kg, 4) chubby baby with increased subcutaneous fatty tissue and 5) syndromic child with skin laxity. These were the situations where we do not want arterial line but inadvertent puncture of femoral artery may make venous access difficult. It was easy to get arterial puncture than venous. During routine method of venous puncture, when we got arterial access inadvertently, we did not remove the needle, rather 0.018 Terumo wire or steel wire which supplied along with groin sheath is guided in the femoral artery and aorta and the needle is kept in situ to prevent blood oozing. We take another 22 G needle and with the help of in situ needle and guide wire (as landmark) we get the venous access successfully. Removing needle from arterial puncture makes the field messy, continuous oozing of blood and sometimes small internal hematoma also. Internal little blood collection distorts the local anatomy further and complicated the right puncture to a more difficult condition. Continuous oozing increased the stress level of the operator further decreased the confidence level. Putting a small arterial sheath is not desired at all. Taking a small 22 G venous cannula or leader cath can also be guided over the wire but we have observed, especially in these difficult condition and small babies that it made the small puncture field clumsier. In our experience this technique also prevented to shift another (left) groin in 10 out of 11 babies. The main key to successful intervention in cath lab is getting percutaneous entry or vascular access. Successful fast vascular access increased the confidence level of the performer. Benefits of ultrasound guided vascular access over the landmark guided access have been reported by many operators but it may not be available with most of the centre or it may not be that convenient to use in extremely small baby like one kg. First time, we are describing a new technique to access the femoral vein in difficult situations. It is rather better not to poke blindly and take help of a new technique which may increase the success rate and protect other groin from injury. Double needle technique to obtain femoral venous access is really very useful technique in difficult situation.

Biography

Nurul Islam has completed his graduation in Medical Science from Calcutta National Medical College, India. He has done his Post-graduation in Pediatrics from Vivekananda Institute of Medical Sciences under the West Bengal University of Health Sciences in 2010. He completed his Fellowship in Pediatric Cardiology under Diplomate National Board (DNB) from Indraprastha Apollo Hospitals, Delhi and has done his training in Advanced Pediatric Cardiac Intervention from Evelina Children Hospital, Guys and St Thomas Trust in UK. Currently, he is working as a Consultant Interventional Pediatric Cardiologist at the Mission Hospital.

nurulpeds cardio@gmail.com

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