

USE OF LINEAR PROBE IN USG MACHINE FOR EMERGENCY AND ROUTINE VASCULAR DISEASE MANAGEMENT

ANNEXURE 2

1. Emergency Set up

In emergency it can be used to insert Ultrasound Guided peripheral lines or central lines where patient is in shock and it is difficult to access vessels.

It is used for Pain Management and Anaesthesia.

2. ICU Set up

Linear probe is used for peripheral line insertions, arterial line insertions, dialysis line access, vessels evaluation in patients with acute limb ischemia.

3. Operation Theatre Set up

It can be used for Peripheral line insertion, arterial line insertion, dialysis line access, Permacath insertion.

4. Out Patient Department (OPD)

It is used for Varicose veins evaluation, post operative care, peripheral line insertions, Arterial assessment.

5. Peripheral – Trauma ambulance

a) Line insertion as patient peripheral venous system is collapsed.

b) Assessment of arteries for Acute Limb Ischemia and veins for acute Deep Venous Treatment (DVT)

6. Oncology Set up

Linear probe is used for PICC line insertions, Chemoport insertion and peripheral vein evaluation for Deep Venous Treatment (DVT)

7. Kidney Disease :

In inserting Central Vein Cannula in Jugular and Subclavian Vein for Dialysis

8. Pulmonary Disease

For insertion and Confirmation of placement Intercostal Drainage tubes, Detection of Pus and Fluid in Pleura.

9. Study of Lymph Edema and Causes

10. Foreign Body detection i.e. Gun shot Particles in Soft tissue.

REFERENCES

1. Ultrasound in vascular surgery

Lang W

Chirurg. 2007 May; 78(5):428, 430-4

Diagnosing vascular diseases by ultrasound is of major interest to vascular surgeons and now regarded as the primary noninvasive technique. This paper presents developments in four different fields: stenoses of the carotid arteries, peripheral artery occlusive diseases (PAOD) including surveillance programs, diseases of the veins, and abdominal aortic aneurysm. Calculating the extent of a carotid artery stenosis is now accurate, but plaque imaging remains complex. Examination by ultrasound should precede any invasive techniques in PAOD. Duplex surveillance on a routine basis is no longer recommended after infrainguinal bypass. In future vascular diseases will be diagnosed primarily by ultrasound. Diagnosis of abdominal aneurysm is now absolutely reliable, whereas planning and follow-up of endoluminal techniques are quite restricted.

PMID: 17431556

DOI: [10.1007/s00104-007-1330-8](https://doi.org/10.1007/s00104-007-1330-8)

2. The use of ultrasound in vascular procedures

Khoo SW, Han DC

Surg Clin North Am. 2011 Feb;91(1):173-84. doi: 10.1016/j.suc.2010.10.009

While the use of duplex ultrasound (DUS) in the diagnosis of vascular disease has been established, its role in vascular procedures continues to expand. More powerful and portable technology has helped to overcome real and perceived barriers to the use of DUS. Familiarity with Doppler and ultrasound physics is helpful to understand the potential roles and limitations of DUS. Use of real-time imaging allows the surgeon to obtain central venous and peripheral arterial access, as well as place vena cava filters and treat iatrogenic arterial pseudoaneurysms with a greater degree of patient safety, comfort, and overall success.

PMID: 21184907

DOI: [10.1016/j.suc.2010.10.009](https://doi.org/10.1016/j.suc.2010.10.009)

3. Ultrasound-guided vascular access – NCBI

A Bukhari

Linear Array Probes These high frequency probes are the commonest probes being used for peripheral vascular and small parts examination. They are good for both color as well as pulse doppler examinations. It is a better choice than a phased array transducer for vessel cannulation.

4. Comparative study of linear and curvilinear ultrasound probes to assess quadriceps rectus femoris muscle mass in healthy subjects and in patients with chronic respiratory disease

Mandal S, Suh E, Thompson A, et al

BMJ Open Respiratory

Research 2016; 3:e000103. doi: 10.1136/bmjresp-2015-000103