

**Fayoum University
Faculty of Medicine
Anesthesiology Department**

**COMPARATIVE STUDY BETWEEN USING THE
ENDOCAVITARY PROBE VERSUS THE LINEAR
ARRAY HIGH FREQUENCY PROBE IN ULTRASOUND-
GUIDED SUPRACLAVICULAR SUBCLAVIAN VEIN
CENTRAL ACCESS.**

A Thesis

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Dedication

I would like to thank;

My father & my mother,

Just "For their support in every step in my life giving

everything & never waiting for anything." Actually,

without them, I would never have achieved any success.

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List of abbreviations

ICA	Internal carotid artery
IJV	Internal jugular vein
L.Ns.	Lymph nodes
AJV	Anterior jugular vein
ECA	External carotid artery
SCV	Subclavian vein
EJV	External jugular vein
SUP	Superior
INF	Inferior
A.	Artery
V.	Vein
SVC	Superior vena cava
CVC	Central venous catheter
TPN	Total parenteral nutrition
I.J.	Internal jugular vein
CVP	Central venous pressure
ASA	American society of anaesthiologist
CLABSI	Central line associated blood stream infection
I.V.	Intravenous
ECG	Electrocardiogram
UK	United kingdom
US	Ultrasound
ICU	Intensive care unit
CDC	Centers of disease control
CRT	Catheter related thrombosis
CRI	Catheter related infection
MRSA	Methicillin resistant staphylococcus aureus
CRBSI	Catheter related blood stream infection
FV	Femoral vein
PZT	Lead,zirconate,titanate
APTT	Activated partial thromboplastin time
PE	Piezo-electric
MHz	Mega hertz
EC	Endo-cavitary
USA	United states of America
G.	Gauge
PWP	Posterior wall puncture
BMI	Body mass index

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Summary

Central venous catheterization is often performed for fluid infusion inpatients with poor peripheral access, hemodynamic monitoring administered only meant to be given via a central line and infusion of irritable or hypertonic solutions and for hemodialysis.

Using the ultrasound method found to have a higher success rate and a decreased incidence of mechanical complications as compared with the landmark one.

Advantages of the supraclavicular approach by endocavitary probe technique over the linear array technique include the small footprint of the probe allows for direct visualization of SC cannulation.

Aim of this study was to compare supraclavicular approach by endocavitary probe technique versus linear array high frequency probe technique.

To fulfill this aim, this study had been carried out on 60 adult patients presented for surgical ICU in Fayoum University hospital.

Patients had been classified into 2 equal groups each of 30 patients.

Group (A): catheter will be inserted using the endocavitary (EC) probe.

Group (B): catheter will be inserted using the linear array high frequency probe.

Exclusion criteria included, Patients younger than age of 18 , Patients with (Severe lung disease (e.g. emphysema) , Vascular malformations , Chest wall deformities, Fracture clavicle, Infection at site of injection , Coagulopathy INR > 1.5, Tumor extension into right atrium, Fungating tricuspid valve vegetation.

In this study, there was a significant difference regarding Cannulation at first attempt, Time needed attempts for venous access, Number of

attempts for venous access between the two groups as (*p-value* = 0.044), (*p-value* =0.0001), (*p-value* =0.038) respectively.

There was no significant difference between the two groups regarding number of skin pricks as (*p-value* =0.068).

There were no significant difference between the two groups regarding occurrence of pneumothorax, hematoma, pneumothorax, catheter-related blood stream infection, and mal position.