



COMPARATIVE STUDY BETWEEN CLINICAL TEST AND DOPPLER ULTRASOUND
IN THE PREOPERATIVE ASSESMENT OF LOWERLIMB VARICOSE VEINS

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ABSTRACT **Background:** Varicose veins affect 25% of adult females and 15% of adult males, with recurrence rates up to 65% after surgery. This is mainly due to inadequate initial surgery, often caused by inaccurate preoperative diagnoses. Duplex imaging has recently become the gold standard for diagnosis. **Objective:** To assess the accuracy of clinical tests compared to color duplex imaging for diagnosing primary varicose veins preoperatively. **Materials And Methods:** This observational study was conducted at Konaseema Institute of Medical Sciences and Research Foundation over 18 months, from August 1st, 2022, to Feb1st, 2024. A total of 60 patients with untreated primary varicose veins underwent clinical examination followed by color Doppler imaging. **Results:** Comparing combined clinical tests with Doppler ultrasound versus Doppler alone shows effectiveness, with sensitivity (85–90%), specificity (75–80%), positive predictive value (80–85%), and negative predictive value (70–75%). **Interpretation And Conclusion:** Clinical tests alone are unreliable for assessing varicose veins. Preoperative Doppler ultrasound alongside clinical exams improves accuracy and reduces recurrence, enhancing surgical planning.

KEYWORDS : Varicose veins, Venous reflux , CEAP Doppler.

INTRODUCTION
Varicose veins are a common clinical issue, affecting about 25% of adult women and 15% of adult men. While surgical treatments for varicose veins are widely performed, they have a high recurrence rate, reaching up to 65%. This recurrence is often linked to factors such as inadequate initial surgeries, which may result from inaccurate preoperative diagnoses. Clinical examinations have traditionally been the primary method for diagnosing varicose veins, as outlined in many courses and textbooks, though their accuracy has been questioned. Recent advancements have made duplex imaging the gold standard for diagnostic support. This study aims to explore the relationship between clinical examination and color Doppler imaging, assessing the accuracy of these clinical tests in the modern era for preoperative diagnosis of varicose veins.

METHODS
Patients underwent clinical assessment using Brodie-Trendelenburg I and II, multiple tourniquet, Schwartz, Perthes, Morrissey's cough impulse, and Fegan's tests. Doppler ultrasound (GE Voluson 750 Pro, 7–12 MHz) was performed. Clinicians and sonologists independently marked incompetent perforators, with intraoperative confirmation using Turner-Warwick's bleed back sign.

OBSERVATION & RESULTS
The CEAP grade distribution was analyzed in both the Clinical Tests and Doppler groups, each with 30 patients. Most patients fell within C1 to C3, indicating mild to moderate varicose veins. Variations in CEAP grades between groups help assess disease severity and guide treatment decisions.

Among 30 patients evaluated with Doppler ultrasound, 83.3% showed venous reflux, indicating retrograde blood flow. Venous insufficiency was found in 66.7%, while 50.0% had anatomical abnormalities like valve dysfunction or obstruction. These findings enhance understanding of varicose vein pathophysiology, supporting diagnosis.

CEAP Grade	Clinical tests (n=30)	Doppler tests (n=30)
C0	4 (13.3%)	3 (10.0%)

C1	10 (33.3%)	8 (26.7%)
C2	7 (23.3%)	5 (16.7%)
C3	8 (26.7%)	7 (23.3%)
C4	1 (3.3%)	4 (13.3%)
C5	0 (0.0%)	3 (10.0%)

CONCLUSIONS
Our study evaluated the accuracy of clinical tests versus Doppler ultrasound in preoperative varicose vein assessment. While Doppler remains the gold standard, clinical exams are crucial for symptom evaluation. Demographic factors influence treatment outcomes, and various modalities show long-term efficacy. Integrating clinical and imaging assessments enhances diagnosis and management, warranting further research for improved strategies.

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