

Saphenous Pulsation: A Marker of Severe Superficial Venous Insufficiency ?

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Introduction

- Pulsatile flow in varicose veins has been described previously to support a causal hypothesis of arteriovenous (AV) fistula.
- However AV communications have never been adequately visualised and pressure tracings in the leg veins have been inconclusive.

Introduction

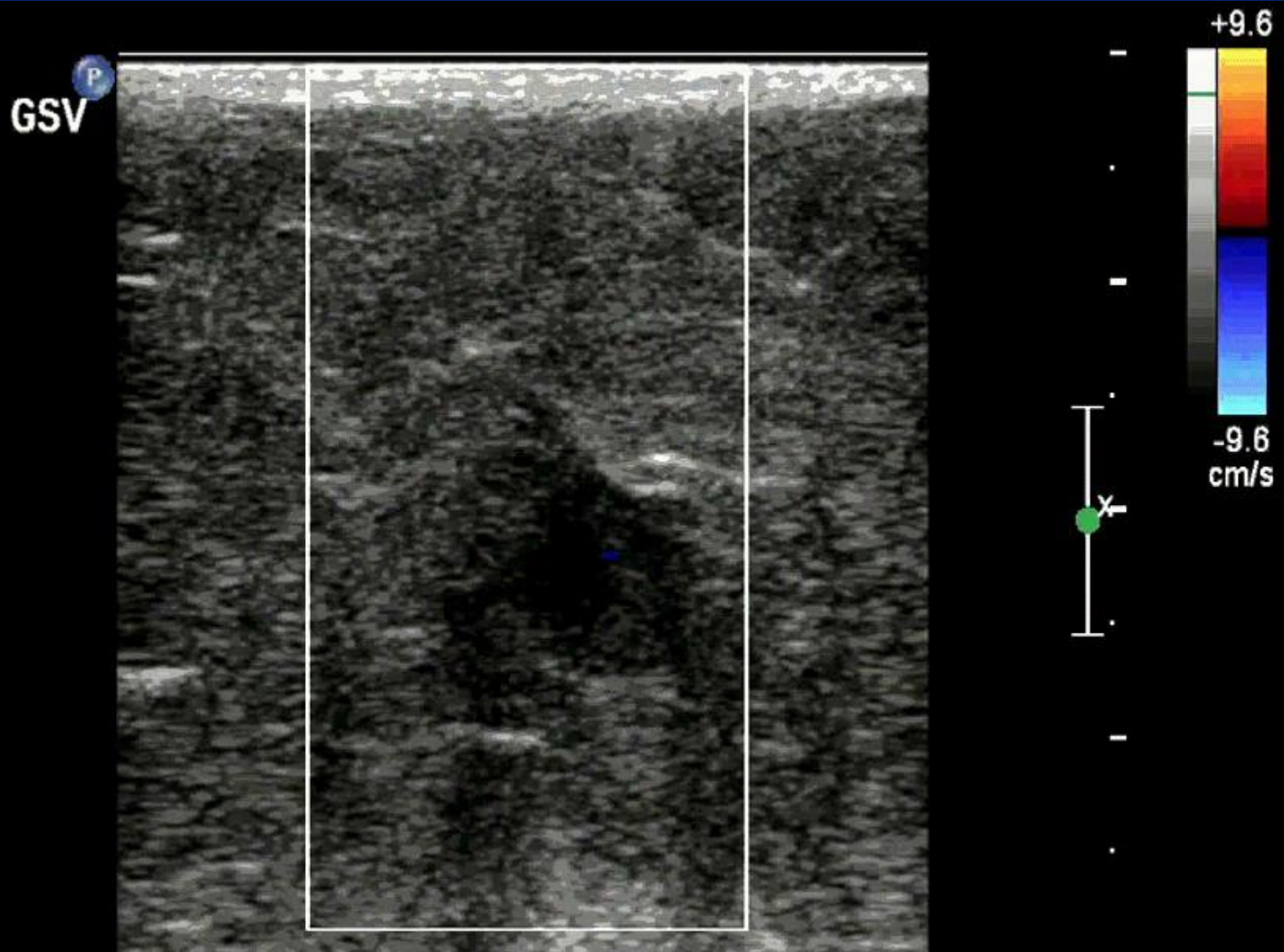
- However the evidence suggests that great saphenous vein pulsation occurs but its prevalence, aetiology, and associations are not known.

Haimovici H *et al.* Surgery 1987; 101:515-22

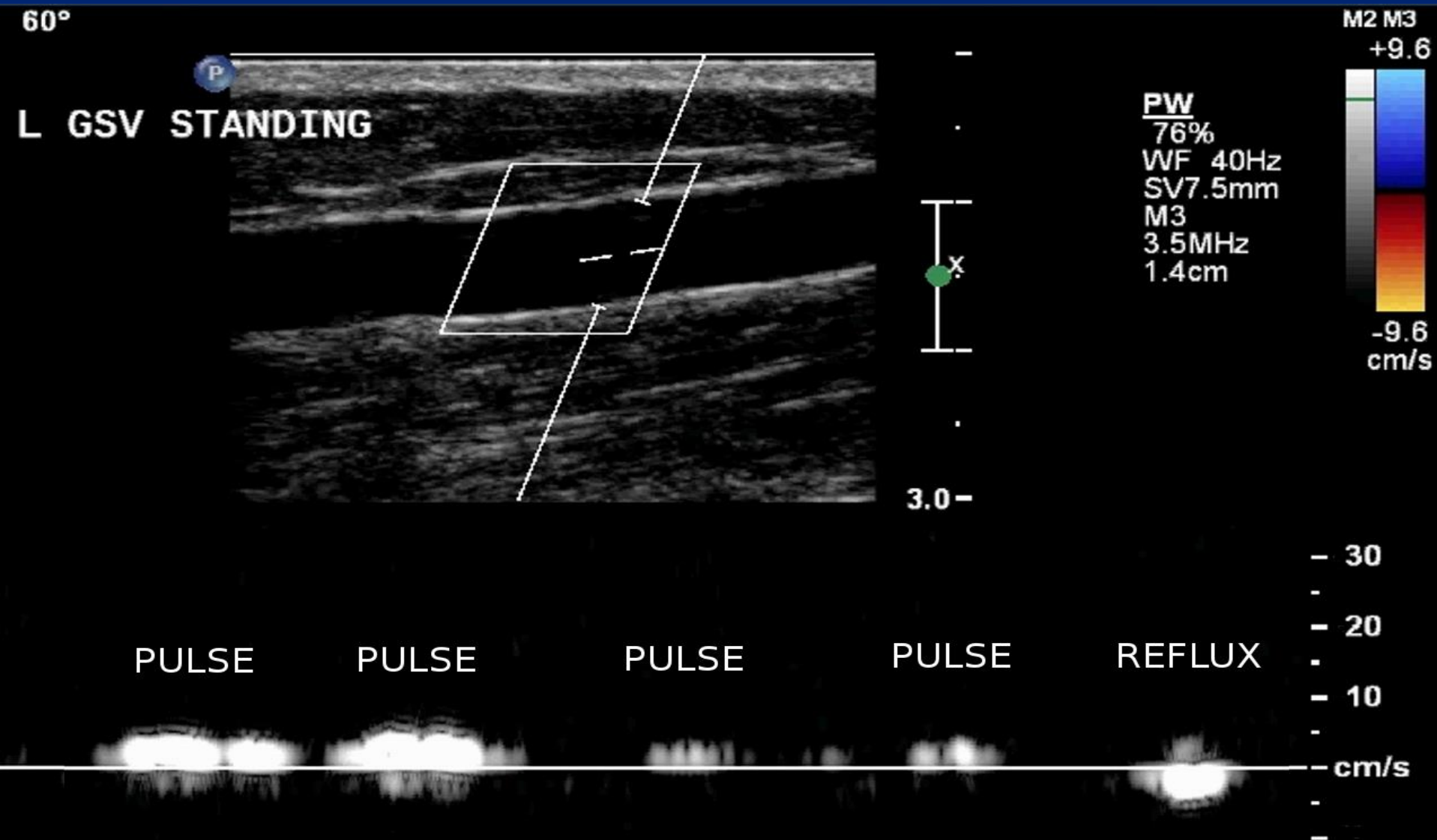
Definitions

- Pulsation is defined as a cyclical change in velocity that can be regular or irregular. Pulsatile flow occurs when there is a predominant component in one direction.
- Palpability, or the detection of a pulse by touch , is not necessary to determine the presence of pulsation

Colour Duplex



Duplex Trace



Aims

1. Investigate the prevalence of spontaneous pulsation within the GSV
2. Identify any association with:

Clinical severity

GSV reflux

GSV diameter

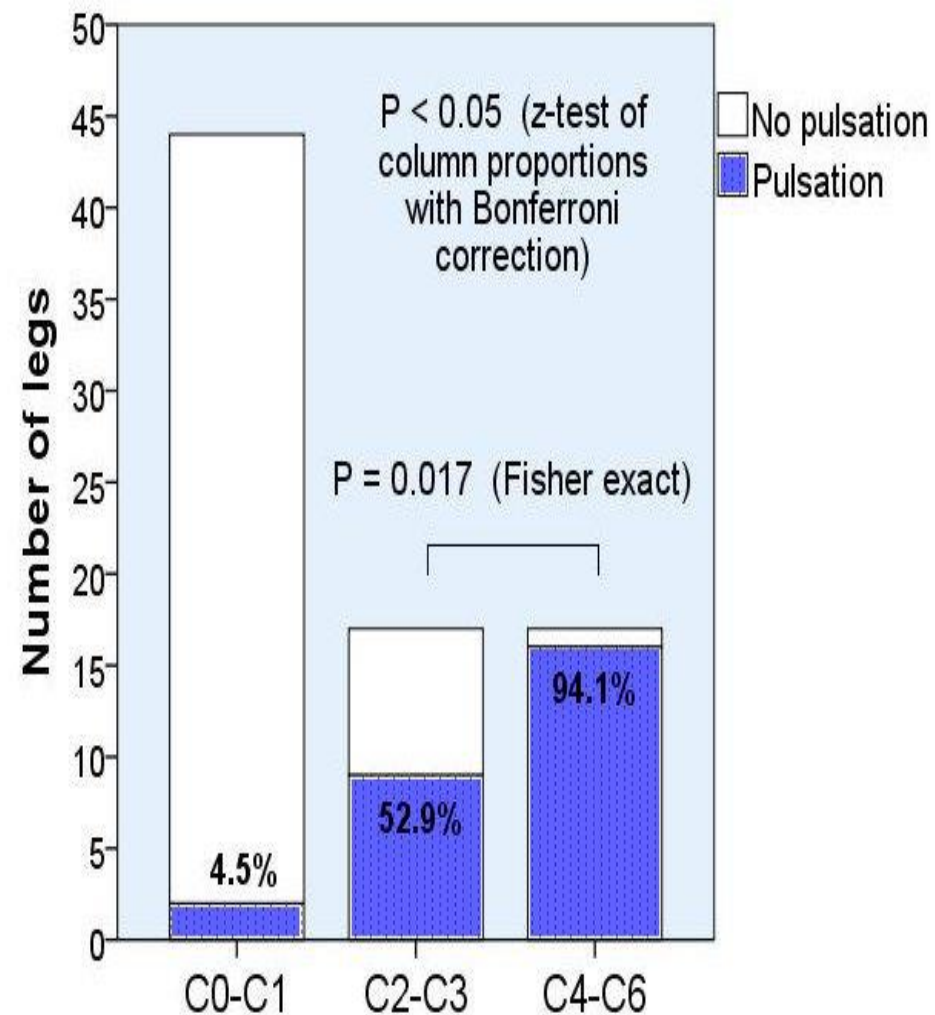
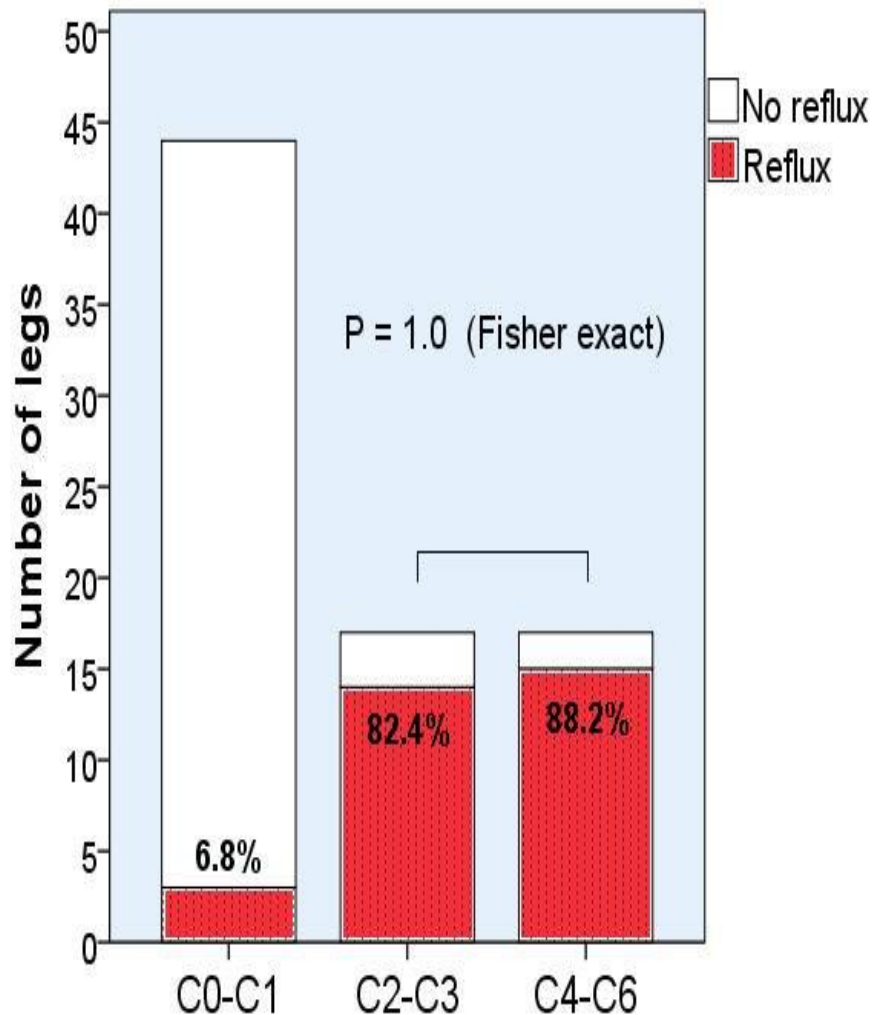
Study Design / Method

- Prospective observational study
- 23 ambulatory volunteers (46 legs)
- 27 patients (32 legs) attending VV clinic
- C part of CEAP classification
- Duplex on GSV in mid-thigh whilst standing
- Presence of reflux & GSV diameter
- GSV pulsation & rate from video records

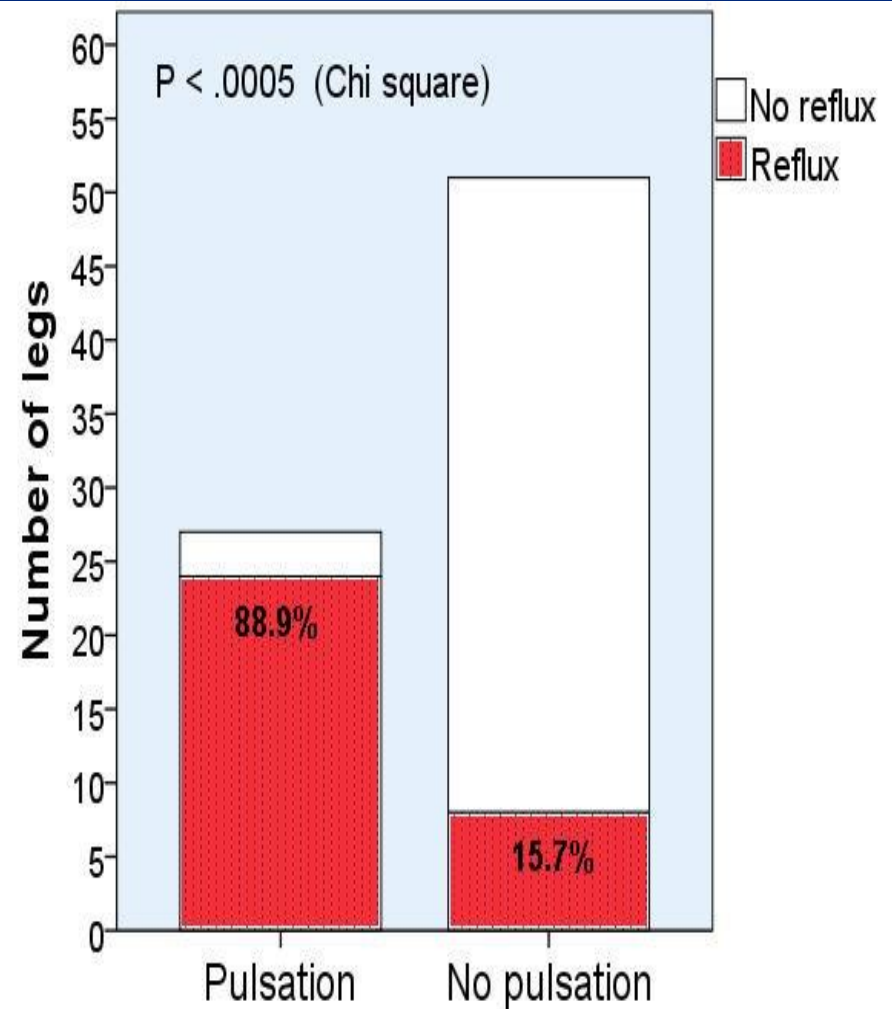
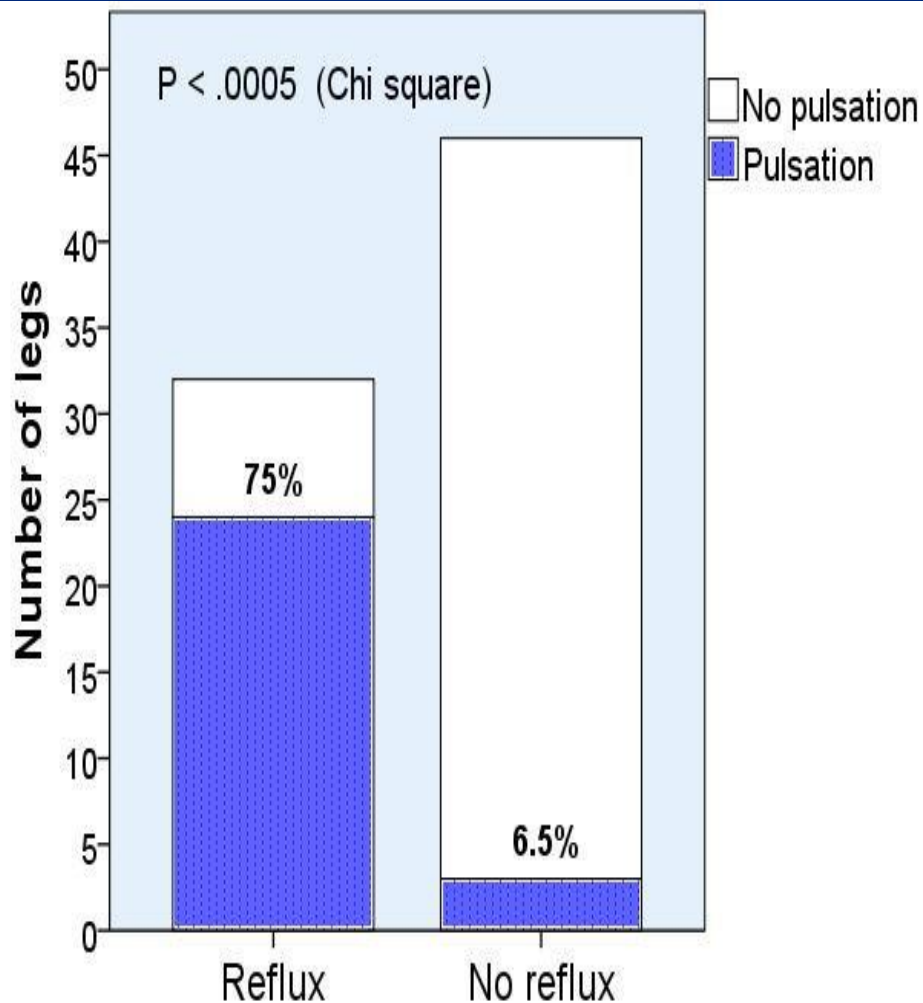
Subject characteristics

	<u>GSV reflux</u>	<u>No reflux</u>	<u>P value</u>
Legs (n)	32	46	
Age	46 (30-80)	46 (22-96)	.784
M:F ratio	12:20	13:33	.389
Median Ø mm	6.9 (2.7-9.4)	3.5 (1.5-7.2)	<.0005
GSV pulsation	24/32 (75%)	3/46 (6.5%)	<.0005
Median SP/min	52 (22-95)	18 (16-75)	.231

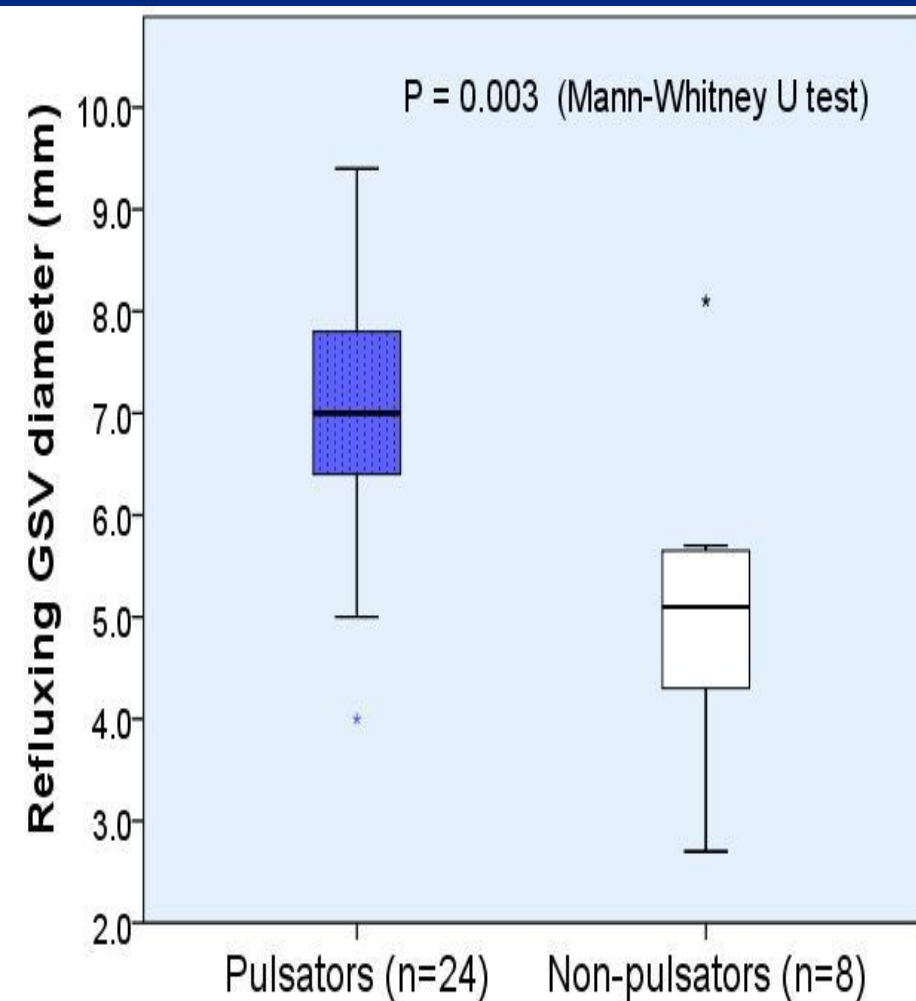
Reflux & Pulsation vs Severity



Relationship: Pulsation & Reflux



Refluxing GSV Ø vs Pulsation



**Large diameter GSV's
with reflux are more
likely to have a
saphenous pulse**

Summary

1. Saphenous pulsation (SP) occurs in 94.1 % of patients in C₄₋₆ grade of clinical severity
2. Significant relationship ($P < 0.05$) between clinical severity & SP
3. In contrast to reflux, SP can stratify patients with early disease (C 2, C3) into 2 groups using the presence or absence of SP
4. SP is quick & easy to record

Discussion

The presence of a SP should complement reflux assessment in the investigation of venous disease

MICRO-CIRCULATORY FAILURE ?

GSV ^P

