

Role of Doppler Ultrasound for Great Saphenous Vein Mapping in guiding the endoscopic vessel harvesting, measure twice, cut once

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BACKGROUND

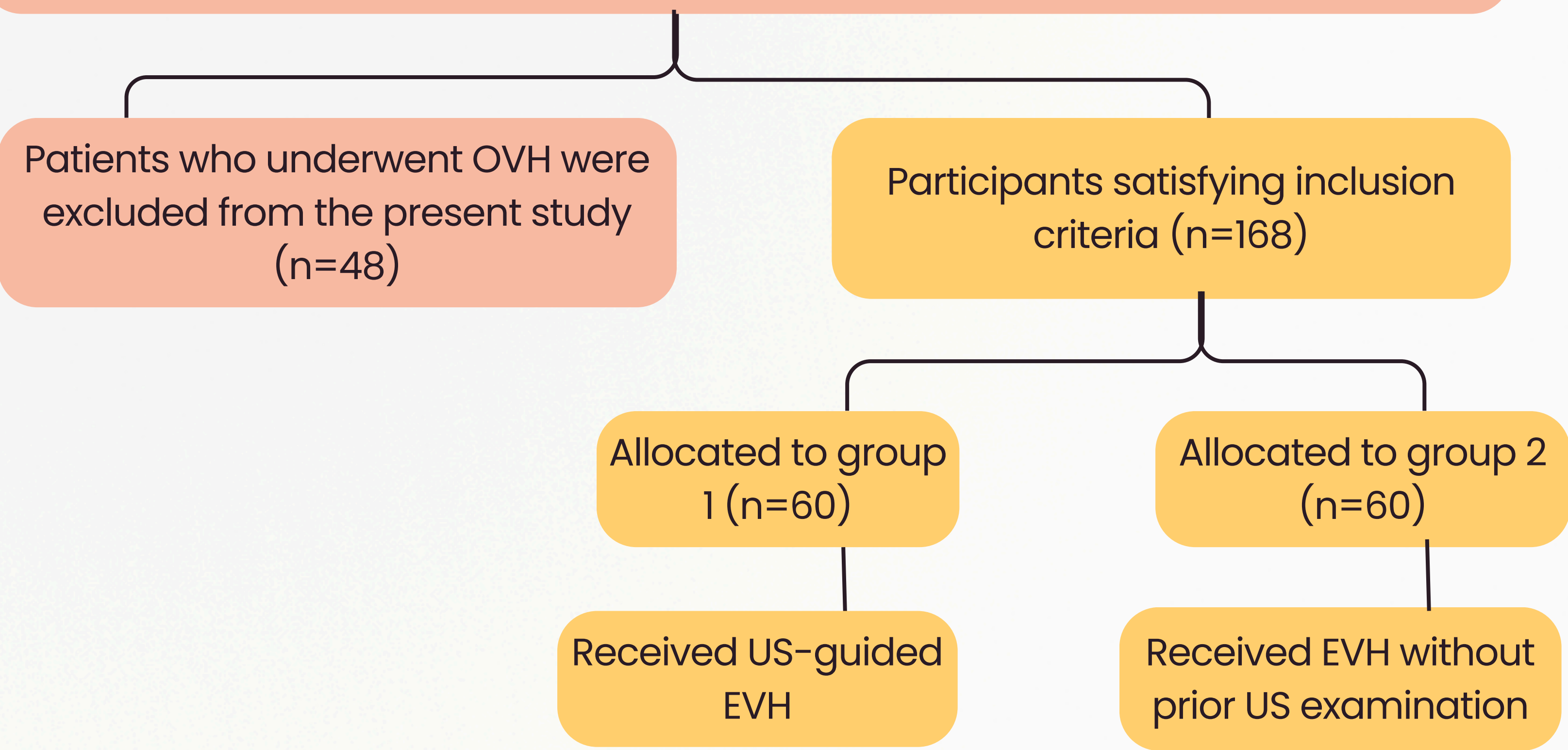
- Coronary artery bypass grafting (CABG) is the most common cardiac surgery worldwide, with the great saphenous vein (GSV) frequently used.
- Endoscopic vein harvesting (EVH), widely adopted over the past two decades offers significant advantages over open vein harvesting (OVH), including fewer leg wound complications and quicker recovery, especially with enhanced recovery after surgery (ERAS) protocols.
- However, despite clinical assessment, variability in the GSV's anatomy, calibre, and quality often remains uncertain until surgery.
- Doppler ultrasound is increasingly used for patient selection, offering an anatomical roadmap and identifying potential challenges when direct vein inspection isn't possible.

AIM

- This study aimed to evaluate the usefulness of intraoperative great saphenous vein mapping by the harvester in assessing conduit quality, vein location, harvesting time, and post-operative morbidity.

METHODS

A retrospective review of 1430 patients who underwent CABG using the GSV as a conduit, in our institution between the years 2019 and 2024.

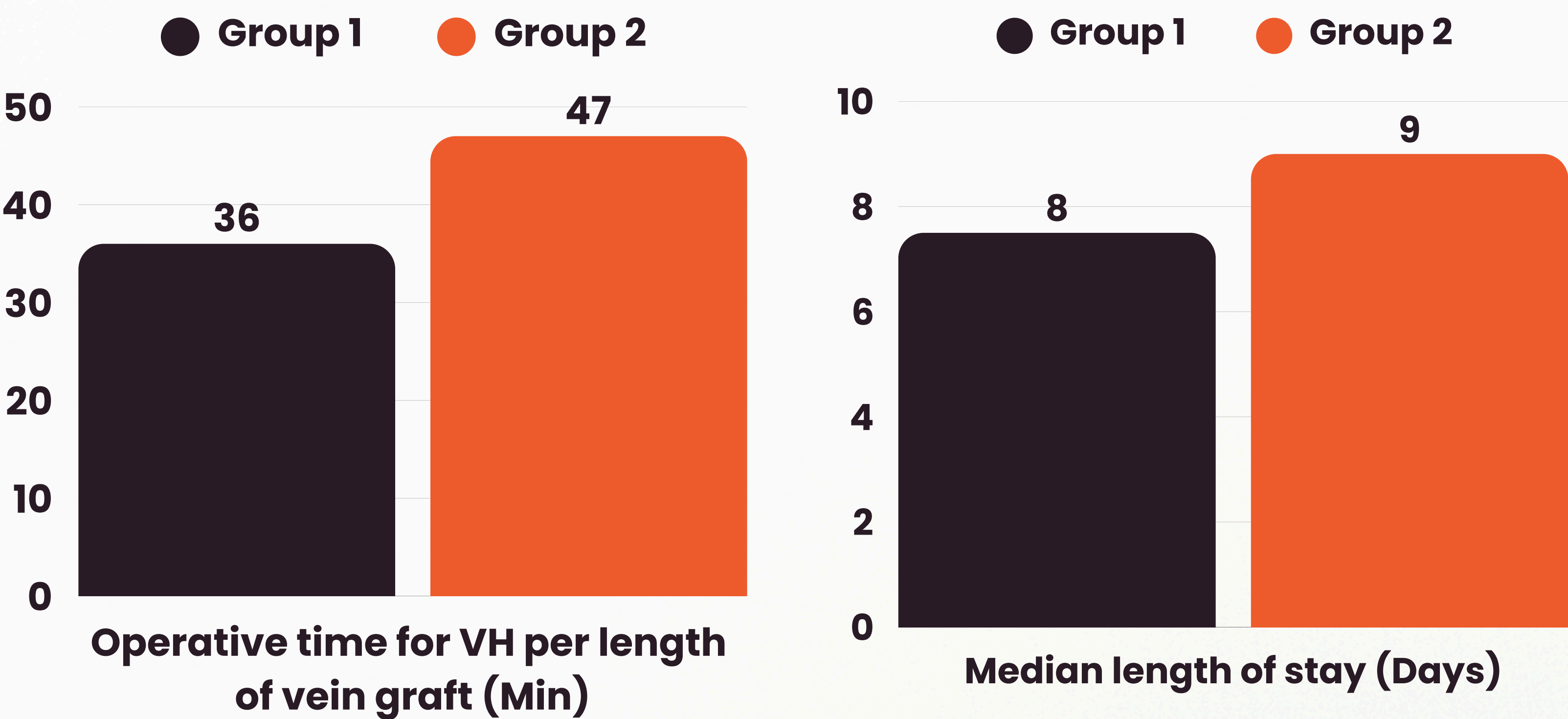


- Enrolled patients were 68.8 ± 10.7 years old, 67% male and 33% female.
- The distribution of the preoperative and perioperative variables was similar.

RESULTS

- The site of incision and anatomical variations of the GSV were well predicted (100%, 95% respectively, $p < 0.05$) by the ultrasound study.
- This translated in a shorter operative time for vein harvesting per length of vein graft needed 36 ± 13 vs. 47 ± 17 min, **P=0.04**.

- Post-operatively there was a tendency to less leg wound complications in the mapped group ($P=0.08$) and earlier hospital discharge (median length of stay 7.5 days vs. 9.0 days, **P=0.06**).



CONCLUSION

- Vascular US mapping of the saphenous vein in CABG reduces wound issues and incisions. More research is needed on CM's long-term effect on pacemaker needs.

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