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Significant Reduction In Pacu Costs With Use Of Celt Acd Compared To Other Closure Devices

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Introduction: There are a wide variety of arterial closure devices available, most of which require a several-hour PACU stay to ensure adequate hemostasis. The CELT device uses 2 permanent stainless steel implants to achieve hemostasis which reportedly allows quicker return to ambulation. With this in mind, we designed a study to compare outcomes of the new CELT closure device with respect to PACU length of stay and cost as compared to other closure devices.

Methods: We designed a single-center double-arm prospective study to compare the outcomes of closure devices available at our facility. Ninety patients were enrolled in the study in an 8-month period between September 15, 2022, and May 15, 2023. The choice of closure device was left to the operator. Forty-six patients underwent closure with the CELT ACD (Vasorum Ltd.) while forty-four patients underwent closure with other devices. Primary endpoints included PACU length of stay and cost. Secondary endpoints included overall complication rate and device failure requiring open repair.

Results: The two groups were comparable in their demographic profile. 32.7% of the CELT group was female, compared to 27.3% in the non-CELT group. 22 (47.8%) patients had a 6 French (Fr) CELT closure compared to 10 (22.7%) 6 Fr other closures. 16 (34.8%) patients had a 5 Fr CELT closure compared to 24 (54.5%) 5 Fr other closures. 5 (10.9%) patients had a brachial artery CELT closure compared to 3 (6.8%) patients that had other brachial artery closures. Overall complication rate was comparable between CELT (6.5%) and other devices (6.8%). All 3 failures with the other closure devices required open repair while 1 patient in the CELT group required open repair. Mean PACU length of stay in the CELT group was 120.7 mins compared to 237.7 mins in the other group ($p < 0.001$). Mean
PACU cost was $2285.88 in the CELT group vs $4501.29 in the other group ($p < 0.001$).

Conclusion: The CELT ACD was comparable to other devices in terms of safety and efficacy. There was significantly lower PACU LOS and PACU cost associated with CELT use. The cost of the CELT device is comparable to that of the other devices available at our institution. There was also a trend towards less severe adverse outcomes with CELT device failure vs. the other closure devices.

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