



KEY POINT SUMMARY

OBJECTIVES

The objective of this study was to determine if hybrid operating rooms (ORs) should be used for endovascular aneurysm repair (EVAR). The authors hypothesized that the use of hybrid ORs would improve efficiency and accuracy and minimize patient exposure to radiation.

DESIGN IMPLICATIONS

The authors recommend that an endovascular hybrid room with fixed imaging be more efficient in terms of operating time and better outcomes.

Improved efficiency and safety for EVAR with utilization of a hybrid room

Varu, V. N., Greenberg, J. I., & Lee, J. T. 2013 | *European Journal of Vascular and Endovascular Surgery*. Volume 46, Issue 6, Pages 675-679

Key Concepts/Context

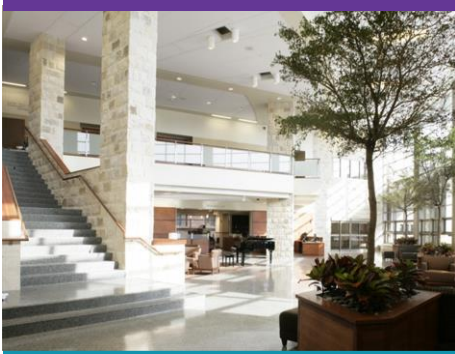
The authors allude to technological advances like image-guided and catheter-based interventions in connection with contemporary vascular surgery in recent years. They indicate that with procedures becoming more complex, dedicated interventional suites with suitably trained and experienced staff were becoming a necessity. In the case of procedures for endovascular aneurysm repair (EVAR), the authors consider the C-arm in the operating room (OR) as acceptable, and recommend the hybrid OR suite as more efficient. Toward this objective, the authors examined and compared the EVAR procedures conducted in a tertiary care center before and after moving to a hybrid OR. They found that operating time in the hybrid OR and the use of contrast dye in a hybrid OR were considerably less than that in the OR with a C-arm.

Methods

A tertiary care referral center's EVAR practice had transitioned to a hybrid endovascular suite in July 2010. A retrospective review was conducted of 109 EVAR procedures performed by a single surgeon at this practice between January 2008 and August 2012. Of these, 58 cases were done in an OR with a C-arm (until July 2010); the remaining 51 cases had been performed in the hybrid OR. The information was obtained from the database of the referral center. Subset analysis was conducted to identify differences that may have been associated with the transition to the hybrid OR – so the first half of the C-arm group was compared with the first half of the hybrid group (referred to as early), and the second half of both groups was compared (referred to as the late group). The data was analyzed statistically.

Findings

- The two groups – C-arm and hybrid -- were similar demographically, by the morphology of their aneurysm and by procedural characteristics.



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- Hybrid patients needed a significantly smaller amount of contrast dye than the C-arm patients ($p < 0.05$).
- Time in the OR was 30 minutes less for the hybrid patients compared to C-arm patients ($p < 0.05$).
- Fewer mean additional EVAR components were used for the hybrid group as compared with the C-arm group, but this difference was not statistically significant.
- Fluoroscopy time for the hybrid group as compared with the C-arm group was slightly shorter, although this was not statistically significant.
- No difference was observed in the subset analysis, indicating there was no learning curve associated with the transition to the hybrid OR.
- With regard to post-operative issues, no difference was observed between the two groups in connection with postoperative complications; there were fewer patients with endoleaks in the hybrid group than in the C-arm group, but this difference was not statistically significant.

Limitations

The authors identified the following limitations to their study:

- It was a single-center, single-surgeon review, with a high chance of bias of patient selection.
- The authors do not indicate if they sought approval of the Institutional Review Board.

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