

Oral presentation

Who should perform shunt surgery? Data from the UK Shunt Registry

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Background

Shunt surgery is performed by both consultant and trainee surgeons. The performance of grade of surgeon was compared in terms of cumulative revision rate (CRR) and infection risk in both adult and paediatric (age <17 years) patients.

Materials and methods

The UK Shunt Registry contains data on nearly 33,000 CSF shunt-related procedures. Our data suggests that primary factors involved in shunt revision are patient age, diagnosis and the number of revisions a patient has had. Procedures were identified where the main operating surgeon was a consultant surgeon. A database search was performed for procedures matched for patient age, diagnosis and revision status but where the main surgeon was a trainee. Two matched-pair cohorts were constructed, one for paediatric patients ($n = 1404$) and adults ($n = 1578$). The CRR for consultants and trainees were compared using a logrank test and the infection risk compared using a chi-square test.

Results

Primary analysis suggests that in both in adult patients, and to a greater extent in children, the one-year CRR for procedures performed by consultants was significantly better than that for trainee surgeons.

However, the timing of surgery confounds this data. Consultants perform most of their surgery during the day and

mainly trainees perform surgery during the evening and night¹. If the analysis is repeated on procedures where the starting time was between 8:00 and 16:00 only, the one-year CRRs in adults were 22.3% and 23.8% for consultants and trainees respectively ($n = 1687$ pairs). In children the one-year CRRs were 36.8% and 38.6% ($n = 822$ pairs). The differences were statistically significant for 13 weeks only.

In procedures where the starting time was during the evening and night, the one-year CRRs in adults were 26.1% and 36.8% for consultants and trainees respectively ($n = 310$ pairs). In children the one-year CRRs were 39.3% and 50.9% ($n = 233$ pairs). The differences were statistically significant for 3 years in children and for the full 5-year follow-up period in adults.

There were no statistically significant ($P > 0.05$) differences between the infection risk for consultants and trainees in adults or children, day or evening/night surgery.

Conclusion

This data suggests that in children and to a lesser degree in adults the CRR is probably determined by surgical experience. However, this data is confounded by the time of surgery. Infection risk is determined by factors other than experience of the surgeon.