Volume-Based Trends in Parotid Surgery

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RESULTS

A total of 3,842 cases met study criteria. The majority of patients were female, white, had commercial or Medicare/Medicaid payer status and received their care at a community hospital. Malignant disease accounted for 19.2% of cases. Partial parotidectomy was the most common surgical procedure and was performed in 66% of all patients. (Figure 1) The distribution of primary parotid surgical procedures differed significantly between 1990-1999 & 2000-2009, with a decrease in other unspecified procedures, an increase in total parotidectomy, and an increase in neck dissection for 2000-2009 compared to 1990-1999 (P<0.001).

Overall, 473 surgeons performed parotid surgery, although not all surgeons performed surgery in every year of the study period. Only 14 surgeons were categorized as high volume surgeons (3.0%), while 424 surgeons (89.6%) performed 1-2 parotid surgeries per year on average. There were 47 hospitals that cared for patients undergoing parotid surgery, with only 1 hospital (2%) categorized as high volume.

In 2000-2009, the proportion of high volume surgeons operating at high volume hospitals had increased to 22.0% of all cases, (Figure 3) while low volume surgeons performed 40.4% of all parotid surgery. Comparison of data from 2000-2009 to 1990-1999 revealed statistically significant trends of improved access to high volume surgeons and high volume hospitals. (Figure 4) There was a statistically significant increase in the proportion of cases performed by high volume surgeons from 18.2% in 1990-1999 to 35.7% in 2000-2009 (OR= 2.80, 95% CI 2.38-3.30, P<0.001), while the proportion of cases performed by surgeons in the lowest volume quartile decreased from 28.7% to 19.9%. The proportion of cases performed at high volume hospitals increased from 17.0% in 1990-1999 to 32.5% in 2000-2009 (OR= 2.72, 95% CI 2.31-3.21, P<0.001), while the proportion of cases performed at hospitals in the lowest volume quartile decreased from 30.9% to 19.9%.

Multiple logistic regression analysis revealed that high-volume surgeons were significantly associated with university hospitals (OR=12.43, 95% CI 10.05-15.36, P<0.001), a decreased odds of unspecified surgical procedures (OR=0.63, 95% CI 0.48-0.83, P=0.001) and Medicare/Medicaid status (OR=0.79, 95% CI 0.63-0.98, P=0.034). High-volume hospitals were significantly associated with high-volume surgeons (OR=9.35, 95% CI 7.61-11.48, P<0.001) neck dissection (OR=1.47, 95% CI 1.08-1.99, P=0.013), ICU utilization (OR=1.32, 95% CI 1.08-1.62, P=0.006) and a decreased odds for Medicare/Medicaid (OR=0.73, 95% CI 0.58-0.93, P=0.009). After controlling for other variables, parotid surgery in 2000-2009 was associated with high-volume surgeons (OR=1.51, 95% CI 1.21-1.89, P<0.001), university hospitals (OR=1.59, 95% CI 1.28-1.98, P<0.001), neck dissection (OR=1.90, 95% CI 1.42-2.54, P<0.001), and non-white race (OR=1.18, 95% CI 1.07-1.30, P=0.001), with a decreased odds of surgery at community-teaching hospitals (OR=0.66, 95% CI 0.47-0.91, P=0.013), all associated with general surgery residencies, and in length of hospitalization (OR=0.88, 95% CI 0.83-0.93, P<0.001), compared to 1990-1999.

CONCLUSIONS

The proportion of parotid surgery performed by high-volume surgeons and university hospitals increased significantly from 1990-1999 to 2000-2009, with a decrease in length of hospitalization and in cases performed at community-teaching hospitals affiliated with general surgery residency programs. The data suggest a favorable trend towards increasing specialization and concentration of specialty care.

REFERENCES