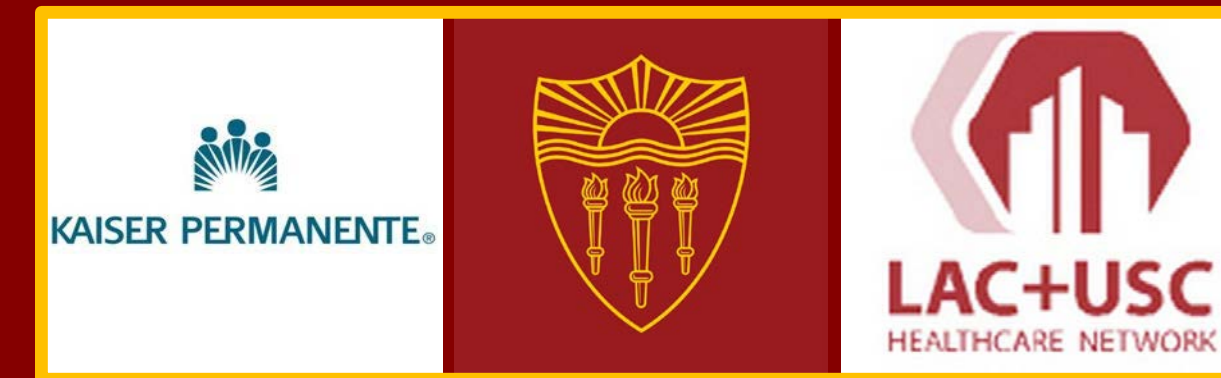


Differences in Complications of Elbow Arthroscopy Between Adult and Pediatric Patients

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INTRODUCTION

- The volume and complexity of elbow arthroscopies has increased over the last two decades.
- Few large studies document the associated complications, especially one representative of the community orthopaedic surgeon.

METHODS

- Retrospective chart review
- 560 consecutive elbow arthroscopies in 528 patients
 - 114 pediatric cases were included
- Surgeries performed by 42 surgeons at 13 facilities
- Average follow up was 375.8 days (0-7.5 years).
- Recorded complications included nerve injury, vascular injury, re-operation, re-hospitalization, infection, heterotopic ossification, compartment syndrome and DVT/PE

RESULTS

- Previous elbow surgery (OR 3.57, P=0.006) and female gender (OR4.05; P=0.002) were significant risk factors for nerve injury
- All cases of heterotopic ossification occurred in male patients, but no other significant risk factors were identified.

Complication	Rate
Transient Nerve Palsies (1.4% Ulnar, 1.4% Radial, 0.5% MABC, 0.2% Median)	3.5%
Heterotopic Ossification	2.5%
Superficial Infection	2.0%
Deep Infection	0.5%
Vascular Injury	0%
Compartment Syndrome	0%
DVT/PE	0%

Table 1: Risk of Complication For Infection

	Odds ratio	95% CI	P-value
Age ≥65	1.090	0.139 8.566	0.9349
Age >18	3.355	0.434 25.918	0.2459
BMI ≥40	2.385	0.295 19.289	0.4152
DM/PreDM	4.112	1.337 12.645	0.0136
Tourniquet Time >60m	0.527	0.169 1.639	0.2686
Previous elbow surgery	2.340	0.768 7.128	0.1346
Complexity score 6+	1.135	0.351 3.677	0.8325
>4 portals	0.488	0.063 3.782	0.4919
Male	1.601	0.353 7.254	0.5416
Surgeon >5 years in practice	0.801	0.173 3.701	0.7761

Table 2: Risk of Complication for Nerve Injury

	Odds ratio	95% CI	P-value
Age >18	2.328	0.532 10.183	0.2616
BMI ≥40	3.625	0.775 16.965	0.1019
Tourniquet Time >60m	0.983	0.350 2.762	0.9735
Previous elbow surgery	3.567	1.440 8.839	0.0060
Complexity score 6+	0.941	0.336 2.636	0.9077
Complexity score 7+	1.463	0.416 5.145	0.5527
supine vs lateral	2.714	0.301 24.494	0.3737
prone vs lateral	0.826	0.319 2.135	0.6928
supine vs prone	3.287	0.385 28.067	0.2768
Female	4.047	1.642 9.970	0.0024
Surgeon >5 years in practice	2.397	0.312 18.397	0.4004
Smoker	0.552	0.072 4.216	0.5668

Table 4: Risk of Complication for Heterotopic Ossification

	Odds ratio	95% CI	P-value
Age >18	1.403	0.307 6.417	0.6627
BMI ≥40	2.583	0.317 21.020	0.3749
Tourniquet Time >90m	1.910	0.529 6.903	0.3234
Previous elbow surgery	1.237	0.335 4.573	0.7499
Complexity score 6+	1.791	0.576 5.564	0.3138
Complexity score 7+	2.519	0.674 9.417	0.1697
Smoker	0.906	0.115 7.123	0.9251

RESULTS (CONTINUED)

- Diabetes/pre-diabetes had a significantly higher risk for infection (OR 4.11, P=0.0136)
- Relative to pediatric patients, adult patients had a trend towards higher risk in for nerve injury (OR 2.33; P=0.27), infection (OR 3.35; P=0.25), and heterotopic ossification (OR 1.40; P=0.66). There was no difference in re-operation rate (OR 0.92, P=0.8).

CONCLUSION

- Elbow arthroscopy remains a safe procedure with very low complication rates.
- There were higher complications in adults relative to pediatric patients, but they did not reach significance.
- The major weakness of the study is that the complications were very low and statistical analysis was challenging due to few complications.

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