Frequency and Impact of Inappropriate Emergent Transfer for Hand and Face Consultation

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Introduction:

Hand and facial injuries represent greater than one quarter of all traumatic injuries presenting to emergency departments (EDs) in the United States each year. Plastic surgeons are frequently consulted for these injuries, and patients are often transferred to trauma centers for evaluation by a specialist. We sought to identify the frequency and impact of "unnecessary" transfers for emergency evaluation by a plastic surgeon at Rhode Island's only Level I trauma center.

Methods:

We reviewed more than 32,000 consecutive ED referrals to our institution. Of 1256 transferred for hand or facial emergencies between April 2009 to April 2013, 76 were excluded from because they had poly-trauma or requested a specialty consultation not primarily by a plastic surgeon. Using a retrospective chart review, each referral was coded as either appropriate or inappropriate based both on the intervention performed at our institution and the availability of these resources at the transferring site.

Results:

A total of 1180 patients were transferred for "specialist" evaluation of hand or facial emergency. The mean age was 36 years old and the majority were males (71%). Most were transferred from another ED (73%). Of all the patients referred for 'emergency' evaluation, 321 (27.1%) were necessary (Table 1). Transfers for hand trauma were more likely to be coded as unnecessary more often than for facial traumas (76% vs. 66%, $p < 0.001$). The average time from referral to discharge from the ED was 409 minutes. From available hospital charges, the expense for these unnecessary transfers exceeded 4.6 million.

Conclusions:

This is the first intervention-based study evaluating the frequency and impact of unnecessary transfer for evaluation of hand and facial "emergencies." Using a classification system based on EMTALA regulations, we found that less than one third of patients required emergent transfer. Over half did not receive an intervention from a plastic surgeon. Based on patient time and financial expenses for these unnecessary evaluations, significant improvements could be made in both quality and cost of care by limiting inappropriate ED referrals. There already exists a framework for patient transfer from the community ED to tertiary care center according to the American College of Surgeon Advance Trauma Life Support guideline. We advocate establishing similar guidelines for patients who need emergent face and hand consultation.

Table 1. Intervention performed and necessity for transfer for emergent hand and face consults.

	Hand		Face		Total Hand Face	
Interventions	Necessary	Unnecessary	Necessary	Unnecessary	Necessary	Unnecessary
No consult	2 (1.6%)	126 (98.4%)	0 (0%)	41 (100%)	2 (1.2%)	167 (98.8%)
Consult, no procedure	3 (1.7%)	176 (98.3%)	24 (23.8%)	77 (76.2%)	27 (9.6%)	253 (90.4%)
Consult, procedure by ER	5 (27.8%)	13 (72.2%)	1 (1.5%)	67 (98.5%)	6 (7%)	80 (93%)
Consult, procedure by PRS	115 (61.2%)	73 (38.8%)	50 (83.3%)	10 (16.7%)	165 (66.5%)	83 (33.5%)
Admission, no surgery	13 (12.6%)	90 (87.4)	24 (52.2%)	22 (47.8%)	37 (24.8%)	112 (75.2%)
Admission, delayed surgery	27 (50.9%)	26 (49.1%)	15 (88.2%)	2 (11.8%)	42 (60%)	28 (40%)
Emergency surgery	22 (88%)	3 (12%)	5 (100%)	0 (0%)	27 (90%)	3 (10%)
Elective surgery	7 (6.4)	103 (93.6%)	8 (21.1%)	30 (78.9%)	15 (10.1%)	133 (89.9%)
Total	194 (24.1%)	610 (75.9%)	127 (33.8%)	249 (66.2%)	321 (27.2%)	859 (72.8%)

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Disclosures:
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