

Paramedic – Evidence Based Medicine (P-EBP) Program

Paramedic CAT (Critically Appraised Topic) Worksheet

Title: Magill Forceps Use In FBAO

Report By: Bryce Sear, Garrett Brannagan, Courtney Dawn Clory, Ellen Rice

2nd Party Appraiser: Jen Greene

Clinical Scenario: You arrive to a steakhouse to find an unresponsive patient on the floor receiving compressions by bystanders. Bystanders stated to you that the patient was eating and then suddenly showed the universal sign for choking, 911 was called, abdominal thrusts and back blows were unsuccessful by bystanders and the patient became unresponsive. EMS arrived on scene approx. 2 minutes later after the patient became unresponsive.

PICO (Population – Intervention – Comparison – Outcome) Question:

P – Prehospital adult patient

I – Magill forceps

C – No Magill forceps/other methods

O – Survival

Search Outcome:

Magill's forceps

#1 AND #3 AND #4 AND #5

Abdominal thrusts OR chest compressions OR Heimlich

"foreign body obstruction" OR FBAO OR choking

"Emergency Medical Services"[mh] OR "Emergency Medical Technicians"[mh] OR paramedic*[tiab] OR

"emergency medical technician*" [tiab] OR prehospital[tiab] OR pre-hospital[tiab] OR "out of hospital"[tiab] OR first responder*[tiab] OR emergency responder*[tiab] OR ambulance[tiab])



Paramedic - Evidence Based Medicine (P-EBP) Program

Emergency Medical Services OR Emergency Medical Technicians OR paramedic* OR emergency medical technician* OR prehospital OR pre-hospital OR "out of hospital" OR responder* OR ambulance

Relevant Papers:

AUTHOR, DATE	POPULATION: SAMPLE CHARACTERISTICS	DESIGN (LOE)	OUTCOMES	RESULTS	STRENGTHS/ WEAKNESSES
Tomohiko Sakai, 2014	2,354 EMS patients who suffered from FBAO in Osaka City from 2000-2007	Retrospective study Level II	Survival at 1 month	<p>These are the <u>actual numbers</u> they found. Include p-value or confidence interval if provided.</p> <p>2,354 Patients, 466 of them had an out of hospital cardiac arrest (OHCA), 344 witnessed by bystanders. Magill forceps use for OHCA with FBAO had a neurologically favorable survival rate at 16.4% versus non-use group 4.3% (p=0.023)(Confidence interval, 1.21-13.00)</p> <p>Ex:78% conversion rate in electrical cardioversion group vs. 76% in adenosine group (p=0.8)</p>	<p>Flaws: Mentioned new suction-based airway device which was not included in the study. Retrospective study. Weakness mentioned in the paper didn't specify the type of FBAO or if it was removed prehospitally. Other</p> <p>Positive: Good keywords for search, large sample size, used many different variables regarding patient's age/location/population, treatment, better statistics for outcome (survival at 1 month and neurologically favourable at 1 month)</p>



Paramedic - Evidence Based Medicine (P-EBP) Program

				Ex: 3.2% mortality with adenosine Ex:98% satisfaction with electrical cardioversion vs. 28% in chemical conversion group. (p=0.001)	Study is trustworthy, appears to be very well done with many different variables and scenarios considered.
Keith Couper, 2020	Adults and children with FBAO in any setting. 1,376 Patients	Retrospective Systematic review Level II	Effectiveness of interventions	Odds ratio 6.0, 95% confidence interval 1.5-23.4 Early removal of airway obstruction improved odds of neurological survival	Flaws: Doesn't focus on suction intervention, due to type of study not all patient outcomes could be concluded Positive: Ilcor study, broad variety of systems (US, Europe, Japan)

Comments: No prospective of studies being done with this subject. Limited studies to choose from.

Consider: All studies reviewed; minimal evidence was found to have patient harm with use of Magill's. Some agencies may not want to change practice due to money for equipment, training, staffing.

Clinical Bottom Line: *If all other interventions failed, Magill's were found to be effective in removal of FBAO*



Paramedic - Evidence Based Medicine (P-EBP) Program

References:

Keith Couper, Aysha Abu Hassan, Vrinda Ohri, Emma Patterson, Ho Tsun Tang, Robert Bingham, Theresa Olasveengen, Gavin D. Perkins,
Removal of foreign body airway obstruction: A systematic review of interventions,
Resuscitation,
Volume 156,
2020,
Pages 174-181,
ISSN 0300-9572,
<https://doi.org/10.1016/j.resuscitation.2020.09.007>.
(<https://www.sciencedirect.com/science/article/pii/S030095722030455X>)
Abstract: Objective

Sakai, T., Kitamura, T., Iwami, T. et al. Effectiveness of prehospital Magill forceps use for out-of-hospital cardiac arrest due to foreign body airway obstruction in Osaka City. Scand J Trauma Resusc Emerg Med 22, 53 (2014).
<https://doi.org/10.1186/s13049-014-0053-3>

