Cranial burr holes in the emergency department: to drill or not to drill?

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Several years ago, I was working in a small community ED. A young man who had been stabbed in the right chest was dropped off in the ambulance bay. He was pale with a rapid and weak pulse. He then went unresponsive. I quickly performed a needle thoracostomy followed by a 32F chest drain evacuating approximately 400 mL of blood. There was an immediate improvement in his perfusion and overall condition. He was eventually transferred to the regional trauma centre and had an uneventful hospital stay.

Later that same evening, a large (150 kg) middle aged man was brought in by ambulance after being assaulted with a baseball bat. He was obtunded with a GCS of 6, heart rate of 50 beats/min and a BP of 170/100 mm Hg. Due to a number of factors, it was a challenging airway but I was able to successfully secure the patients airway with an Endotrachael tube v. CT scan showed an isolated large right sided epidural haematoma with mass effect. Mannitol was started. Urgent transport to definitive neurosurgical care 45 minutes away. Despite our efforts, he had a poor outcome. A CT of the head showed an epidural haematoma with mass effect and a depressed fracture.

It is perplexing just why the cranium seems to be the last bastion of ‘specialty only’ emergency procedures. It certainly is not a new concept. Earliest evidence of cranial trephination on live subjects dates back to as early as 8000 BC.1 Fortunately tribalism has largely faded as we now see well-trained non-surgeon physicians routinely performing traditional surgical procedures (lateral canthotomy, thoracotomy, surgical airway, REBOA and even resuscitative hystertomy) in emergency situations with excellent outcomes. Technically, an emergency ‘burr hole’ craniostomy is not any more difficult than placing a chest drain and certainly easier than a thoracotomy. The indications are straightforward. Like any medical procedure, it requires initial and recurrent training. It does require some specialty, but readily available instruments (cranial perforator/bit and drill/brace).2 This EMJ case study3 is a perfect illustration that emergency craniostomy can be safely and effectively delivered by properly equipped and trained non-surgeon physicians (Emergency Medicine consultants) under circumstances that would otherwise result in a dismal outcome.

My Irish colleagues were presented with a choice. Either they perform the craniosotomy in the ED or let it be done by the pathologist at autopsy. I applauded their commitment to the correct decision.

REFERENCES

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