

Ashley-Rose Humphries

CAT block 5 R1

Reference: Man or machine? An experimental study of prehospital emergency amputation

Caroline Leech, Keith Porter [Emerg Med J](#). 2016 Sep;33(9):641-4. doi: 10.1136/emered-2015-204881.

Epub 2016 Jun 8.

Clinical question: What different techniques of prehospital emergency amputation are there?

Introduction: Emergency amputation of extremities in the prehospital setting are sometimes lifesaving. There is little known about different techniques of amputations in the field. This study looked into 4 different methods of amputations.

Methods:

4 different methods of prehospital emergency amputations were studied for efficacy. Two methods were performed by a surgeon who used either a Gigli saw or a hacksaw for the bone cuts. The two other methods were performed by firemen who either used a reciprocating saw or Holmatro device. Several different criteria were looked at. Primary outcome measurements were time to full amputation and how many attempts were required to achieve full amputation. Secondary outcome measures were observed quality of skin cut, soft tissue cut and CT assessment of the proximal bone.

Results:

The quickest of the methods were the reciprocating saw (22 sec) and the Holmatro device (less than a minute). However, the reciprocation saw had the most blood spattering and was not exact as it continued to cut the surface under the leg. The Holmatro device had the most proximal soft tissue damage.

Discussion:

This paper allows for initiation of thought and discussion on the different techniques of emergency limb amputation. There needs to be further research done to determine the best technique as this just provides a small window into the field.

Limitations:

This study had a few major limitations. For one, the simulation was done on cadavers in much different conditions than reality (cadavers were not trapped, moving, bad lighting, etc.). Another is that a surgeon vs. fireman were used which does not allow for a good comparison due to the vast differences in skill sets. The cadavers were not all the same so differences in limb sizes could have also caused limitations. The criteria used were very subjective as well and did not lead for good objectivity of the data.

---