Reviewer’s report

Title: Unexpected collateral impact after out of hospital resuscitation using LUCAS System

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Reviewer: Malcolm Will

Reviewer’s report:

Dear Author,

I did not like the title - patient survived the out of hospital arrest. Resuscitation either by manual or compression devices has recognised risks of sternal or rib injury but is essential and life saving. The injury is not unique to the LUCAS device. Such devices allow doctors or paramedics to perform other duties whilst maintaining compression.

It is hard from the manuscript to identify the extent of chest wall injury - CT not done for obvious reasons but clinically was this bilateral flail chest or sternal flail? Needs more description.

If the flail chest was recognised clinically prior to surgery, was fixation not considered at the end of the procedure? The impression of the article is that the fractures were noted on re-inspection and not initially thought to cause an issue. Traumatic rib fixation is now quite widely established as a treatment if flail chest and ventilated.

To me the photo suggests fractures of the anterior portions of left 3,4,5 ribs (was this not recognised on harvest of LIMA?) but the x-ray shows fixation 2,5 and 9th? Usually fix adjacent or alternative ribs. Need to explain thought processes? How were the ribs exposed for fixation ie the approach?

The 2nd rib plate has only 1 screw on one side of the fracture - why? Should be 3. Were the screws not gripping on the costal cartilage anteriorly? In traumatic flail chest 2nd rib fixation is not routinely recommended. Explain your decision to fix?

Explain the decision to delay fixation of the right sided rib fractures for 3 days (was it failure to wean off ventilator?. Why then favour Sratos clips rather than plates?

If these points could be addressed the article re-written would have more clarity which is currently lacking to a reader.

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