Abdominoperineal excision (APE) is associated with worse outcomes compared with anterior resection for rectal cancer. We have previously shown that extra-levator APE removes more tissue around the tumour, reducing CRM involvement and intraoperative perforations (IOPs) compared to standard APE surgery. The optimum operative position, perineal reconstruction method and patient morbidity remain unknown.

We received clinical data, pathological reports and specimen photographs for 176 extra-levator APE specimens from 11 European specialist colorectal surgeons and compared them to 124 standard specimens from 8 surgeons. Pathological dissection was performed using standard methods.

Blood loss, time to patient discharge and sexual/urinary complications were similar. However, extra-levator surgery was associated with an increase in perineal wound complications (38% vs. 20%, p=0.02), which was partially reduced by using myocutaneous flaps or Permacol™ during perineal reconstruction. Extra-levator perineal dissection in the prone position removed significantly more tissue per slice in the distal rectum compared to lithotomy (2333mm² vs. 1964mm², p=0.0008) resulting in a lower IOP rate (6% vs. 21%, p=0.03).

Extra-levator APE appears safe and although perineal complications are increased compared to standard surgery, enhanced reconstruction may reduce this risk. Additionally, extra-levator perineal dissection in the prone position removes more tissue and reduces intraoperative perforations compared to lithotomy. We estimate that the widespread adoption of this operation would improve survival rates by 10% leading to the
saving of around 200 lives per year in the United Kingdom alone and many more if translated around the world.