

## Euro surgery 2020: Laparoscopic Versus Open Appendectomy in Children with Complicated Appendicitis in a Tertiary Teaching Hospital

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**Background:** Acute appendicitis in children is the most common surgical emergency. Good outcomes have been reported with laparoscopic appendectomy (LA) in children for uncomplicated appendicitis. But the use of laparoscopy for complicated appendicitis in children is more controversial. Higher incidences of postoperative abdominal and wound infections have been reported. The purpose of this study was to compare LA and open appendectomy (OA) for complicated appendicitis in children.

**Methodology:** This was a prospective study conducted by the department of Pediatric surgery over a period of 4 years from January 2015 to January 2019. All the children with complicated appendicitis were included in the study (perforation with localised/generalised abscess, appendicular, gangrenous appendix). Children with simple appendicitis were excluded from the study. In the study period 80 children presented with complicated appendicitis. 40 children underwent open appendectomy and remaining 40 underwent laparoscopic appendectomy. Data

collection included demographics, duration of symptoms, type of complicated appendicitis, operative time, resumption of diet, early and late complication, length of hospitalization and duration of antibiotic use. The documented benefits of the laparoscopic appendectomy (LA) procedure have led to its increasing acceptance for the treatment of appendicitis, it is nonetheless considered more expensive to perform than a traditional open appendectomy (OA) [1]. There are persistent doubts about the advantages and disadvantages in using LA for complicated appendicitis[2].

Although adopted by many centers as a gold standard, benefits of LA over OA are still in debate by many surgeons. This may be attributed to the simplicity of OA – which is relatively easy to perform – low morbidity and cosmetic problems are low. Many studies failed to demonstrate the benefits of LA compared to OA, but this might be explained by the fact that these studies were performed in the learning period[3],[4].

Recently many studies show that LA provides considerable benefits over OA, including a shorter hospital stay, less postoperative pain, earlier postoperative recovery, and lower complication rate[5].

The introduction of laparoscopy provides an opportunity to visualize the entire abdominal cavity in cases of diagnostic dilemmas[6].

The aim of this study was to compare between LA and OA in complicated acute appendicitis to determine which procedure is better. Data were fed to the computer and analyzed using IBM SPSS software package version 20.0 (IBM Corp., Armonk, New York, USA). Qualitative data were described using number and percentage. The Kolmogorov–Smirnov test was used to verify the normality of distribution. Quantitative data were described using range (minimum and maximum), mean, SD, and median. Significance of the obtained results was judged at the 5% level.

**Patients and methods:** After the ethical committee's approval and informed consent, a prospective equivalence randomized study was conducted on 40 patients with suspected complicated acute appendicitis, and the equivalence study was randomly submitted to OA or LA. The suspicion of acute appendi-

citis to be complicated was achieved by the following criteria: history of present illness more than 3 days, fever more than 39°C, total leukocytic account more than 11 000, and signs of complications in investigations in sonar or computed tomography scan.

The patients were admitted to the emergency room in Menoufia University, and Shebein El Kom Teaching Hospitals during the period from September 2014 to November 2015.

The patients were equivalently randomized in two groups.

**Group A:** including 20 patients for whom LA was done.

**Group B:** including 20 for whom OA was done.

In OA, the mesoappendix was divided between clamps and tied using 2-0 absorbable suture, and for the appendix itself, two hemostatic clamps were placed at its base. The clamp closest to the caecum was removed, having crushed the appendix at that site. Two heavy, absorbable sutures were used to doubly ligate the appendix, and the appendix was subsequently divided proximal to the second clamp.

In LA, the mesoappendix was secured either by harmonic or multiple large clips. The absorbable 2/0 tie was used to ligate the appendix at its base at two

sites, either by endoloops or intracorporeal suture, and then divided.

**Results-** No significant difference was found with respect to age, duration of symptoms and total

leucocyte count between two groups. The operative time for LA (55.83 ±4.81 minutes for LA vs

67.16 ±4.27 minutes for OA; P = .0001) was shorter. Patients in the LA group returned to oral intake earlier (2.83 ±0.31 days for LA vs 3.84 ±0.33 days for OA; P = .001) and had a shorter length of hospital stay (5.11 ±0.55 days for LA vs 7.92 ±1.06 days for OA; P = .0001). The incidence of

wound infection in group LA was 5.5% compared to 18.9% in OA group.

**Conclusion:** The laparoscopic technique for complicated appendicitis in children is feasible, safe.

Laparoscopic appendectomy should be the initial procedure of choice for most cases of complicated

**Biography:** Dr.Dhruva has completed his undergraduation from KIMS bangalore and is pursuing his post-graduation in general surgery at KIMS bangalore.