ORIGINAL RESEARCH PAPER

General Surgery

EARLY DISCHARGE AFTER LAPAROSCOPIC APPENDECTOMY FOR COMPLICATED APPENDICITIS: IS IT SAFE?

KEY WORDS:

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INTRODUCTION:

Laparoscopic appendectomy is recognized as an efficient and safe technique for both uncomplicated and complicated appendicitis. Recent studies have shown an equivalent result between open appendectomy and laparoscopic appendectomy for intra-abdominal abscess. Superior outcomes have been demonstrated regarding surgical site infection, length of stay, hospital costs and return to normal activity. Up to 25% of appendicitis is gangrenous, perforated or abscessed at the time of surgery. Some of the patients with complicated appendicitis progress better than other after surgery and might not require long course of IV antibiotics and prolonged hospital stay. An early discharge of selected patients will minimize hospital costs while reducing the risk of medical error and nosocomial infection for the patient.

METHOD:

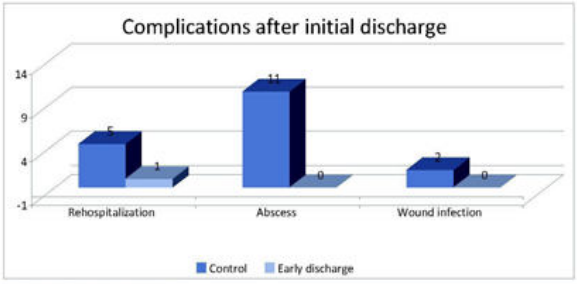
We did a retrospective review of 143 consecutive patients with complicated appendicitis managed by laparoscopic appendectomy between October 2020 and October 2021 at GK General Hospital,Bhuj, Gujarat, India. We included the paediatric population. Outcomes such as operative time, intra-operative findings, time to diet, postoperative fever, length of antibiotics and postoperative complication were analyzed. Patients were separated between the early discharge group (≤3 days) and the control group (>3 days).

Early discharge			
Age	**Sex**	**Complication**	**Investigation and treatment**
63	M	Bowel obstruction (adhesions) POD 10	Hospitalization for medical treatment
51	F	Constipation and hematochezia	Normal colonoscopy
53	F	Diarrhea post-op	Normal colonoscopy
55	M	Perianal abscess	Antibiotics
48	M	Persistant abdominal pain	Normal u/s, pantoloc
57	M	Umbilical wound hematoma	Spontaneous drainage, five days cessation of plavix
		Complication rate	**11.5%**

RESULTS:

Control group			
Age	**Sex**	**Complication**	**Investigation and treatment**
14	M	Persistant abdominal pain	U/S : inflammation without collection, antibiotics
37	M	Persistant abdominal pain	Prolonged certificate of incapacity for work
22	F	Persistant abdominal pain and constipation	Normal U/S, constipation drugs
31	M	Persistant abdominal pain	U/S : inflammation without collection
13	M	Persistant abdominal pain	CT scan : inflammation without collection
56	F	Persistant abdominal pain	CT scan : inflammation and enlarged lymph nodes
52	F	Pleuretic pain and edema	Pulmonary angio CT and scintigraphy normal
39	M	Umbilical cellulitis	Antibiotics
33	M	Abscess	Antibiotics
11	M	Abscess	Antibiotics
10	M	Abscess	Antibiotics
51	M	Abscess	Antibiotics
56	F	Abscess	Percutaneous drainage and antibiotics
57	M	Abscess	Percutaneous drainage and antibiotics
43	M	Abscess and wound infection	Hospitalization for IV antibiotics
9	M	Abscess	Hospitalization for percutaneous drainage and IV antibiotics
16	F	Abscess	Hospitalization for percutaneous drainage and IV antibiotics
50	F	Abscess	Hospitalization for percutaneous drainage and IV antibiotics
48	M	Abscess, postoperative paralytic ileus	Hospitalization for surgical drainage, parenteral nutrition and IV antibiotics.
77	M	Urinary retention and hydronephrosis	Indwelling catheter
		Complication rate	**20.9%**

Fifty-two patients (36.4%) left the hospital at the third post-operative day or before, mean length of stay of 2.38 (1-3 days) vs 6,62 (4-17 days) for control group. Seven patients (13.5%) in the early discharge group had complication. In this group, one patient (1.9%) with bowel obstruction required re-hospitalization for medical treatment of his condition. In the control group, 19 of the 91 patients (20.9%) developed 22 complications. Five (5.5%) required re-hospitalization. Eleven patients (12.1%) had intra-abdominal abscess managed by antibiotics only (5), percutaneous drainage (5) and surgical procedure (1). None of the patients in the early discharge group had intra-abdominal abscess, wound infection or prolonged ileus. Other complication include: residual pain (2), umbilical hematoma (1), perianal abscess (1), hematochezia (1) and diarrhea (1) in the early discharge group and residual pain (6) and urinary retention (1) in the control group. No mortality occurred. Groups were similar in term of co-morbidities (ASA class), age, sex ratio, time to surgery and operative time. A trend toward longer hospitalization is observed with fever at admission and postoperatively, longer duration of symptoms, longer time to normal diet and severity of intra-operative findings.



Demographic information			
	Control (91)	**Early discharge (52)**	**Total (143)**
Age, years	37.1 ±21.4	40.3 ±13.8	38.3 ±19.1
Male gender	54 (60%)	32 (62%)	86 (60%)
ASA			
I	65 (71%)	33 (65%)	98 (67%)
II	19 (21%)	15 (27%)	34 (26%)
III	7 (8%)	3 (6%)	10 (7%)
IV	0	1 (2%)	1 (1%)
V	0	0	0
Lenghts of symptoms			
<12h	10 (11%)	9 (17%)	19 (15%)
12h-24h	22 (24%)	14 (27%)	36 (25%)
24h-48h	29 (32%)	18 (35%)	47 (33%)
>48h	30 (33%)	11 (21%)	41 (27%)
Diagnosis			
Necrotic	14 (15%)	28 (56%)	42 (29%)
Perforated	46 (51%)	15 (27%)	61 (43%)
Abscess	19 (21%)	7 (15%)	26 (18%)
Peritonitis	12 (15%)	2 (6%)	14 (10%)
Time to OR, hours	6.7 ± 4.6	6.6 ± 4.3	6.7 ± 4.5
Surgical time, minutes	70 ± 22	63 ± 19	67 ± 21

CONCLUSION:

Early discharge was not associated with a higher rate of complication or a higher rate of re-hospitalization. Thus, for selected patients, early discharge after laparoscopic appendectomy for complicated appendicitis is safe. Criteria such as normalized leucocyte count, no fever and return to regular diet seem sufficient to safely discharge patient with oral antibiotics. Our study demonstrated that a subgroup of patients progress better, the surgeon experience is essential to identify those patients. We suggest that the hospital stay of a patient should not be prolonged solely on the diagnosis of complicated appendicitis if the postoperative clinical course is satisfying.