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RETROSPECTIVE STUDY OF STUMP APPENDICITIS

General Surgery

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KEYWORDS

BACKGROUND

Stump appendicitis is defined as interval inflammation of any residual appendicular tissue, after an appendicectomy .Appendicectomy for appendicitis is one of the commonest surgical procedures . The residual appendiceal stump left after an initial appendectomy risks the development of stump appendicitis. Stump appendicitis is a real recognized entity but not often considered when evaluating patients with right lower quadrant abdominal pain, especially those with past history of appendiectomy. It remains a clinical challenge with the result that its diagnosis and effective treatment are often delayed with possible attendant morbidity or mortality. Stump appendicitis results from obstruction of the lumen of the remaining appendix stump, usually by a fecalith. This increases intraluminal pressure, impairing venous drainage and allowing subsequent bacterial infection. Surgical treatment is easy but timely recognition of this important entity avoids potentially dangerous complication. This should always be borne in mind in order to avoid delay in its diagnosis and treatment.

AIMS AND OBJECTIVE

1) Incidence of stump appendicitis with respect to open or laparoscopic appendicetomy
2) Presentation of stump appendicitis following appendicetomy.
3) Pattern of management of stump appendicitis (conservative , operative, conservative followed by operative.)
4) Surgeon's choice of open vs laparoscopy method and its outcome in the management of stump appendicitis.

METHOD

This retrospective study was conducted by evaluating medical record of the patients admitted in department of surgery SMIMER hospital from 2018 to 2021. We evaluated medical record of patient admitted with clinical or radiological diagnosis of stumpitis . We evaluated patients' demographic data, date and type of previous appendicectomy, symptom at time of referral, laboratory and radiological investigation, and management of stumpitis. Previous operation and pathology reports were reviewed for confirmation of appendicectomy.

RESULT

We found record of 11 patients with diagnosis of stumpitis. they had previous surgery of appendicectomy either open appendicectomy or laparoscopic appendicectomy between January 2018 to September 2021.

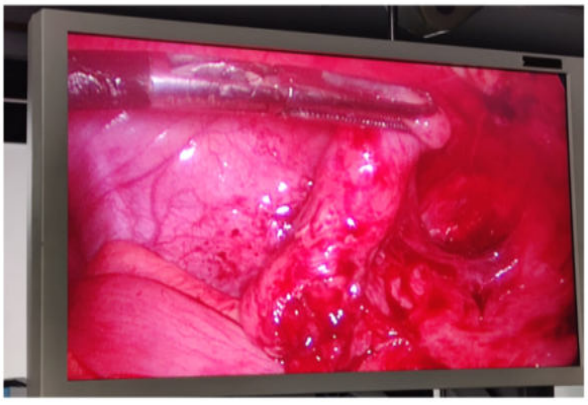

Figure Showing Laparoscopic View Of Stump Appendicitis.

	age	sex	Primary surgery	Interval between primary surgery and time of presentation of stumpitis	Wbc at time of presentation (cells/mm3)	Radiological diagnosis of stumpitis	Length of stump (cm)	Management of stumpitis
1	21	f	open	1 year	8300	Usg +cect	4.6	Laparoscopic surgery
2	26	f	open	11 month	5600	usg	2	Open surgery
3	35	f	lap	2 year	11000	usg	2.6	Open surgery
4	19	m	open	5 year	9800	usg	3	Open surgery
5	22	f	lap	16 month	13400	usg	1.8	Conservative followed by interval laparoscopic surgery
6	20	f	lap	3 year	7600	usg	3	Open surgery
7	25	f	lap	2 year	10100	usg	2	Open surgery
8	18	f	open	4 year	16500	usg	3.2	Open surgery
9	30	m	open	1 year	8000	usg	1.9	Conservative followed by interval laparoscopic surgery
10	24	f	lap	2 year	14200	usg	3	Laparoscopic surgery
11	15	f	open	9 month	17000	Usg +cect	4.6	Laparoscopic surgery

In our study Clinical presentation of patient were same as patient of acute appendicitis which were Fever, nausea, vomiting, tenderness in right lower quadrant, abdominal guarding. Male patients were 18.2% and female patients were 81.8%. They had history of appendicectomy done before 9 months to 5 years. Patient were ranging from 15 to 35 year. Patient had history of previous open appendicectomy in 54.4% and laparoscopic appendicectomy in 45.6% . All patients had routine blood investigation done. A white blood cells were ranging from 6000 cell/mm3 to 17000 cells/mm3. Abdominal ultrasound was done in all patients and showed single, tubular structure noted in right iliac fossa with internal diameter ranging from 2.5 to 8 mm, Possibility of stumpitis. As patient has history of appendicectomy. In our study 2 patients (18.2%) usg were unable to recognize stump of appendix but on clinical ground CECT scan was performed which confirm the stump appendicitis.

In our study 54.5% patients on conservative management were operated after 46 hr of conservative management during same admission by open stumpectomy. 27.2 % patients were treated conservatively for 46 hr and then laparoscopic stumpectomy was done. 18.1% patient were treated conservatively till the inflammation subsided and planned for interval stumpectomy which was done after 1 month laparoscopically. In all open stumpectomy patient spinal anesthesia was given and in all laparoscopic stumpectomy patient general anesthesia was given. One patient had stump abscess while in rest of the patients had inflamed remanent appendix. Base of remnant appendix was ligated after clean and clear delineation followed by excision of stump. The measured length of stump ranges from 1.8 cm to 4.0 cm in our study. Post-op period were uneventful in all patients.

Patients were discharged within 3 to 5 days. Histopathological evaluation of tissue done in all case which showed finding consistent with diagnosis of appendicular stumpitis.

DISCUSSION

Clinicians should have a high index of suspicion for stump appendicitis (4,5) in patients with a history of previous appendectomy who present with an acute appendicitis-like picture. To confirm the diagnosis ultrasound and CT scan may all play a pivotal role. CT scan is more helpful in diagnosing the relation of stump appendix to cecum, base of stump appendix, length of stump, surrounding inflammation, perforation and any abscess formation (6,9). In our study majority (81.8%) of cases has been dignosed with ultrasound abdomen. Most possible reason seems to be advanced experties and better experience in USG abdomen at tertiary center like smimer hospital.

The laparoscopic appendectomy has been well studied and has been found to be equivalent to the more traditional open technique in overall ability to adequately remove the inflamed appendix. There is the notion that stump appendicitis is a new phenomenon that mainly occurs in laparoscopically performed appendectomies (3,4). At least theoretically, there is the potential for an increased incidence of stump appendicitis in laparoscopic surgery due to the lack of a 3-dimensional perspective, and the absence of tactile feedback. Subsequently, a longer stump might be left behind. However, in sharp contrast to this theoretical assumption stands the fact that 54.4% of the cases in our study occurred after open appendectomy (1,2,3). It can occur after either laparoscopic or open appendectomy.

Over recent years, revolution of laparoscopic surgery was led by the evolution of lenses, light sources, endoscopes. Minimal invasive surgeries have many advantages over open surgeries. In few years surgeon developed their laparoscopic surgical skills and perfected laparoscopic technique. Many surgeons prefer laparoscopic appendicectomy over traditional open surgery. So it appear that in future we may see a trend of stump appendicitis more frequently after open appendicectomy rather than open appendicectomy.

The surgical error commonly ascribed to either technique of open or laparoscopic method is the inability in not adequately identifying the base of the appendix, thereby resulting in failure to completely remove the appendix during the initial operation of appendicectomy (12). The important thing is performing the appendectomy after complete exposure of the meso-appendix, taenia coli of the cecum, and appendico-cecal junction and ligation of recurrent or accessory branch of the appendiceal artery (artery of Seshachalam), independent of the choice of method: laparoscopic or open (14) .

According to the literature, remnant appendix tissue > 5 mm in length is a risk factor for fecalitis and stump appendicitis (15). In our study, the length of the remnant appendix ranges from 1.8cm to 4 cm in patients who have undergone surgery with a diagnosis of stump appendicitis and the mean length of the remnant appendix was 2.8 cm. (16 ,17) .

Some authors have suggested stump inversion routinely in all cases after removal of the appendix as a way of minimizing the incidence of stump appendicitis, but others think this is not necessary as long an appendiceal stump of not more than 3 mm in depth is left behind (10,11).

LIMITATION

The study was conducted only 3 years and we reported only 11 cases. It can yield better result if study duration can increase upto 10 years or more.

If we could asses the intra- operative history of patient when they were operated for appendicetomy , it could give better result .

CONCLUSION

Surgeons need to have awareness of the possibility of stump appendicitis in patients with right lower quadrant pain especially in patients presenting with history of appendicectomy. Whether surgeon is doing appendicectomy by open or laparoscopic method he should adhere with standards steps of surgery specially identification of the appendiceal base correctly and remove the appendix without leaving a stump to minimize the risk of stump appendicitis.

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