

The role of laparoscopy in gynaecological practice for diagnosis of stump appendicitis as a rare cause of chronic pelvic pain

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Background

Chronic pelvic pain (CPP) is a diagnostic challenge and one of the difficult conditions to treat specially when there is no clear cause for it. It has been defined as “intermittent or constant pain in the lower abdomen or pelvis of a woman at least 6 months in duration, not occurring exclusively with menstruation or intercourse and not associated with pregnancy”¹. In a systematic review its prevalence in general range from 5.7% to 26.6% and in many countries and regions there are no basic data of CPP².

Its causes could be gynaecological with structural pelvic pathology such as endometriosis, adenomyosis, chronic PID with adhesions and hydrosalpinx³.

Many non gynaecological conditions also present as CPP in clinical practice. These causes could be surgical, urological, gastrointestinal, ortho-neuro-muscular, psychosomatic and neurological⁴ and also it makes identifying the real cause for CPP, a dilemma.

Stump appendicitis (SA) is defined as the “interval repeated inflammation of remaining residual appendiceal tissue after appendectomy”⁵. It is a rare surgical condition and a diagnostic challenge and also ultrasonography might not detect stump appendicitis in many occasions⁶.

Diagnostic laparoscopy has been identified as an effective tool for the diagnosis of causes of chronic pelvic pain⁷ and its use is utmost important in a low resource setting as there is limited access to Computerized Tomography (CT) scan and Magnetic Resonance Imaging (MRI) scan⁸.

We are presenting here a rare case where the laparoscopy was used for the diagnosis and its successful management.

Case presentation

A 35-year-old woman, with past two vaginal deliveries was presented with repeated episodes of colicky,

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chronic pelvic pain more towards right ileac fossa for 15 months duration. She denies fever, vomiting or any other symptoms. Her chronic ongoing pain has restricted her routine activities and had sought medical advice on many occasions.

She had undergone a laparoscopic appendicectomy for acute appendicitis 2 years ago and also had exploratory laparotomy 2 months after appendicectomy as she did not recover from her symptoms. During the laparotomy, a leaking appendicular stump was identified and it was sealed off with an appendicular mass, it was managed conservatively. Her chronic pelvic pain started following her laparotomy.

Her chronic pelvic pain has restricted her farming work and has affected their family income. Her menstruation is normal and she is free of any other medical illnesses in the past.

On clinical examination, her abdomen is not enlarged and a midline scar up to the level of umbilicus with a keloid formation present. Her abdomen was tender over the lower abdomen and it is more localized over the right iliac fossa. No abdominal masses and free fluid were found.

Her speculum examination was normal and per vaginal examination revealed tender right adenexia.

Investigations

C-reactive protein level was <5mg/L. Her White Cell Count $10.63 \times 10^9/L$ and Urine Full Report was unremarkable. Her ultrasonography did not reveal any abnormality and access to CT and MRI are limited in our hospital. Therefore, we decided to proceed with diagnostic laparoscopy and appropriate surgical intervention as per the finding in the laparoscopy.

Treatment

Diagnostic laparoscopy revealed dense adhesions between omentum and laparotomy scar along with an inflammatory mass in the right iliac fossa. After meticulous dissection, the bowel loops were separated to reveal a small residual appendicular stump that was edematous, inflamed and about 2 cm long. A laparoscopic surgeon was called and stump appendicectomy done and collected pus within the appendicular stump was noted during the stump appendicectomy. The stump was sent for histology and it confirmed acute

appendicitis. Following surgery, she was on 3 days of intravenous antibiotics and given oral antibiotics for another 4 days on discharge.

Outcome and follow-up

Following surgery, her symptoms disappeared and she was discharged from the ward after 3 days. She returned to her normal activity after one month and her recovery was uneventful.

Differential diagnosis

As blood and urine test for infective and inflammatory causes were negative and normal ultrasonography, lead the clinician to exclude few common causes for pelvic pain such as adenomyosis, severe endometriosis and chronic pelvic inflammatory disease. Adhesions as a cause of pain cannot be excluded without laparoscopy. Negative results of basic investigations create a window for advanced imaging techniques such as CT and MRI though its availability is limited in our set up.

Discussion

Laparoscopy, as a tool can be used for the diagnosis as well as therapeutic procedures if the set-up has been made for advance laparoscopic procedures. In the developing world only less than 20% of the population has access to CT scan and MRI scan⁹ and need to be in a waiting list. Nevertheless, laparoscopic facilities are available than CT and MRI in the developing world including Sri Lanka. In acute gynaecological conditions if the use of laparoscopy is appropriate, use of it is much more practical than waiting for CT/MRI. In the management of CPP, it needs early accurate diagnosis and treatment to relieve symptoms in order to improve quality of life and restore the working capacity of these women.

As blood, urine and ultrasonography are normal for this patient, the next option was to proceed with CT/MRI scan or diagnostic laparoscopy. As the laparoscopy facilities are already well set in our laparoscopy unit (Professorial Gynaecological Laparoscopy Unit, Rajarata University of Sri Lanka). We proceeded with diagnostic laparoscopy aiming diagnosis and appropriate surgical treatment according its findings.

In a study done in Punjab, India by the surgical and gynaecological departments in 2014, it was concluded that laparoscopy has a diagnostic rate of 93.3% in

patients with chronic abdominal conditions⁹. Another study conducted in 2019 to evaluate the role of laparoscopy in gynaecological diagnosis concluded that it contributed for diagnosis 59.6% in infertility, 93.7% in CPP¹⁰.

SA is an underrated rare condition and its incidence is 1 in 50000 or little bit more¹¹. However, SA as a cause of CPP is further rare and also it is a condition which is very unlikely to consider as a differential diagnosis by a gynaecologist. Therefore, multi-disciplinary approach is the best approach for the management of CPP.

Though laparoscopy is a surgery, it is minimally invasive and also in general it carries 2/1000 risk for major complications such as bladder, bowel, ureter, uterus and blood vessel damage with experienced hands¹².

It is the clinician's judgement to proceed with noninvasive sophisticated technology like CT/MRI or invasive diagnostic laparoscopy. The point we need to stress is if the CT/MRI is negative or inconclusive, then invariably it is necessary to proceed with laparoscopy.

Therefore, in general, diagnostic laparoscopy is a most valuable diagnostic tool specially in low resource setting with or without sophisticated imaging technology and it is worth doing if the clinical expertise is available for advance laparoscopic surgery.

Learning point/take home messages

CPP is a distressing condition to the patient and also a challenging condition to the clinician to find out the cause. Stump appendicitis is a rare condition still we might come across and the use of laparoscopy for diagnosis and treatment of it in low resource setting is highly recommended.

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