

# Gynaecological Diagnosis in Patients with Provisional Diagnosis of Acute Appendicitis

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## ABSTRACT

**Aim:** To study incidence of gynaecological pathologies in operated cases of appendectomies being practiced at Allama Iqbal Memorial Teaching hospital, Sialkot.

**Study Design:** Prospective analysis.

**Place & duration of study:** Department of General Surgery, Khawaja Muhammad Safdar Medical College, Sialkot from January 2014 to June 2017.

**Methods:** All patients serially operated in Emergency and elective cases of Surgical Department of Allama Iqbal Memorial hospital fulfilling the inclusion criteria were registered. Two groups were made: Group 1 patients of appendicitis having gynaecological pathologies both and Group 2 having normal appendix but gynaecological pathology was the true pathology that presented like acute appendicitis. Follow up for 12 weeks was necessary for inclusion in the study.

**Results:** Out of 600 surgeries done during the period of study, 64 patients had gynaecological pathologies. Group 1 having appendicitis and gynaecological pathology both in 29 patients: while Group 2 patients having normal appendix and gynaecological pathology as the definite pathology which presented like acute appendicitis in 35 patients. Group II patients undergone operations like cystectomy, oophorectomy had less morbidity as compared to group I patients which undergone appendectomies along with Ovarian Cystectomy, Oophorectomy, Salpingectomy, Myomectomy Hysterectomy in regards to time for hospital stay and wound infections.

**Keywords:** Acute appendicitis, Pelvic inflammatory disease, Endometriosis, Adnexal torsion,

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## INTRODUCTION

Acute appendicitis is one common diagnosis leading to operative work in Emergency settings as well as in elective cases in a surgical department of any hospital. It presents as acute abdominal pain and its incidence increases with increasing age<sup>1</sup>. Usually the patients land up in surgery at presentation in the Emergency department. The pain abdomen in lower quadrant may be caused by a variety of other pathologies related to many other specialties like gynaecology. In case the diagnosis is straight forward and clear, surgeons do not waste time in getting investigations which are novel and time consuming; but in unclear and vague presentations; modern investigations are definitely sought for to have a clear cut diagnosis and to focus the management according to the definite diagnosis. It is for consideration that a wrong diagnosis as well as delay in treatment caused by seeking investigations leads to increase in morbidity and mortality as well<sup>2,3,4</sup>.

The diagnosis of acute appendicitis is often doubtful in children and especially in women. This factor makes the requirement of keeping the gynaecological problems in mind as other possibilities in patients with lower abdominal pain or appendicitis<sup>5</sup>. Commonest such pathologies can be pelvic inflammatory disease inclusive of acute inflammation of uterine tubes, uterine body and pus collection in adnexa or adnexial abscess<sup>6</sup>.

The possibility of ectopic pregnancy and if it gets ruptured is one situation in which there is high mortality and its diagnosis must be kept at priority in patients with acute appendicitis<sup>7</sup>. There is significant haemorrhage intra abdominally and the abdomen is tense and tender. Similarly an ovarian cyst or a tumour of ovary can present with torsion or rupture and can complicate the presentation in patients with lower abdominal pain<sup>8,9</sup>. In these situations, the detailed history taking can be very helping to rule out the confusing pathologies and come to a definite and reliable diagnosis.

Confusing and overlapping histories merit investigations like laparoscopy and CT scan. So the morbidity in these patients are varied in postoperative period<sup>10</sup>.

So far no research has been done on this issue in our set up; that is why we wanted to collect the

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data of such patients and evaluate the incidence of pathologies occurring alone or concomitant with acute appendicitis, at Surgical department of Allama Iqbal memorial teaching hospital affiliated with Khawaja Muhammad Safdar Medical College, Sialkot

## PATIENTS AND METHODS

After consent for inclusion in the study; all patients who were serially included were properly evaluated by taking a detailed history of the problem including past medical history and surgical procedures; emphasis was laid particularly pelvic surgeries as total abdominal hysterectomy, previous cesarean sections and gynaecological and obstetric history. The data also included sexual history and contraception. Laboratory investigations like, complete blood picture, erythrocyte sedimentation rate, renal profile and hepatitis serology was carried in all patients. Similarly abdominal ultrasonography was done. In unclear presentations, CT scan abdomen was also asked for.

Consent for general anesthesia and surgery was obtained in writing. Two groups were made: Group 1 patients having appendicitis and had concomitant gynecological pathology while Group 2 patients with gynecological pathology as the factual cause but presentation was like acute appendicitis. Appendectomy was performed in all cases of the concomitant diagnosed patients with gynaecological pathologies to prevent diagnostic confusion in the future.

The encountered gynaecological pathologies were varied in group II patients. These pathologies were dealt with appropriate surgical procedures as Ovarian Cystectomy, Oophorectomy, Salpingectomy, Hysterectomy, total abdominal hysterectomy (TAH) with bilateral salpingo-oophorectomy, Myomectomy, open Surgical drainage, adhesiolysis. In encountering some gynaecological pathologies expert gynaecological opinion was also taken. Appendectomy was also performed in these pathologies but in some cases no evidence of appendicitis found so appendectomy was not done in regard to the surgeon perception. All the surgical procedures were done by senior surgeons minimum rank of Assistant Professors.

Operation notes of the patients were endorsed with minor details. Follow up period of at least 3 months was mandatory for assessment of outcome. Known diabetics were excluded, patients lost during follow up and females having definite history of gestational amenorrhoea were excluded. Data of all variables collected and analysis carried by SPSS v 22.

## RESULTS

The basic demographic data of our patients is shown in Table I. The various gynaecological pathologies which we came across on operation table are shown in the Table II. Data analysis of the surgical procedures performed in the patients depending upon the diagnosis is recorded in Table III

Table 1: General demographic information

Total patients in Study	600	100%
Age	12-47 yrs	Mean age 37±8 yrs
Gynaecological Pathologies	64	10.66%
Group 1- Conmittant diagnosis	29	4.83%
Group 2- Gynaecological Diagnosis Alone	35	5.83%
CT Scan done	23	3.94%

Table II: Spectrum of Gynaecological Pathologies

Group I-Conmittant diagnosis- 29(100%)	Group II-Gynaecological diagnosis alone 35(100%)
Ovarian cyst 8(27.5%)	Ovarian cyst 11(31.4%)
Ovarian Mass/solid tumour1(3.44%)	Torsion of ovary and ovarian cyst6(17.14%)
Anomalous uterus 1(3.44%)	Ectopic Pregnancy8(22.85%)
	Adnexal torsion 2(5.71%)
Pelvic inflammatory disease (pelvic abscess) 13 (44.82%)	Pelvic abscess 3(8.57%)
Adhesions 6(20.68%)	Endometriosis (solitary endometrioma)3(8.57%)
	Ovulation bleed 1(2.85%)
	Fibroid uterus 2(5.71%)
	Spontaneous uterine rupture 1 (2.85%)

Table III : Surgical Procedures done (n=108)

	n	Group I	Group II
Appendectomy in addition to other surgery	44(40.74%)	29	15
Ovarian Cystectomy	13(12.03%)	08	05
Oophorectomy	11(10.18%)	01	10
Salpingectomy	10(9.25%)	-	10
Myomectomy	01(0.92%)	-	01
Hysterectomy	03(2.77%)	01	02
Tah with b/Isalpingo-oophorectomy	03(2.77%)	02	01
Usg guided Drainage of abscess	04(3.70%)	03	01
Surgical drainage	12(11.11%)	10	02
Adhesiolysis	09(8.33%)	06	03

## DISCUSSION

We had to deal with 8(27.5%) patients of ovarian cyst in associated pathology and in gynaecological diagnosis alone incidence of ovarian cyst remained 11(31.4%) in our study while studies by Morino et al<sup>11</sup>, Anteby et al<sup>12</sup>, Gaitan et al<sup>13</sup>, Kontoravids et al<sup>14</sup> shows incidence of ovarian cyst as 12%, 27%, 14% , 2% respectively. This difference can be explained on grounds of smaller sample size in our study while the other studies had larger sample size.

Our study highlights 13 (44.82%) patients of pelvic inflammatory disease with concomitant diagnosis and incidence of pelvic abscess as gynaecological pathology alone 3(8.57%) while these incidences as shown by Morino et al<sup>11</sup>, Anteby et al<sup>12</sup>, Gaitan et al<sup>31</sup>, Kontoravids et al<sup>14</sup> are pelvic inflammatory disease as 19%, 21%, 55%, 23% respectively and Jearwattanakanok et al<sup>15</sup> shows incidence of 1.29%.

Patients of Adhesions with concomitant diagnosis in our study were 6 ( 20.68%) while studies by Anteby et al and Morino et al shows incidence of adhesions being 1.34 % and 7.54% respectively .

Torsion of ovary and ovarian cyst with gynaecological pathology alone in our study remained 6(17.14%) patients while studies by Anteby et al<sup>12</sup> shows incidence of torsion of ovarian cyst as 10% which is quite comparable.

Ectopic pregnancy with gynaecological diagnosis alone in our study. There were 8(22.85%) patients comparable to studies by Morino et al<sup>11</sup>, Anteby et al<sup>12</sup>, Gaitan et al<sup>13</sup>, Kontoravids et al<sup>14</sup> which shows incidence of ectopic pregnancy as 1%, 17%, 9%, 19% respectively.

The study by Paul et al<sup>16</sup>, shows incidence of endometriosis as 7% and there were 3(8.57%) patients of endometriosis with gynaecological diagnosis alone in our study.

## CONCLUSION

During appendectomy in Emergency or as elective procedure, the surgeons often come across various gynaecological pathologies as combined or single problem. We should be with a high index of suspicion for these and must manage appropriately to have minimum morbidity. Involvement of expert in gynaecological procedures may be necessary at times.

**Authors contribution:** All the authors have equally contributed to the literature search, data collection, write-up and have read and approved the final version.

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