Original Article

UROLOGICAL INJURIES FOLLOWING OBSTETRIC AND GYNAECOLOGICAL SURGERIES.

ABSTRACT:

Object: To determine frequency, type, management & outcome of various urological injuries following obstetrical & gynaecological surgeries.

Design: A retrospective, descriptive study.

Setting: Departments of Gynae & Obstetric / Urology, Peoples university of medical & health sciences for girls Nawabshah.


Material and Methods: 30 females with age ranges from 17 to 60 years developed various urological injuries following obstetric and gynecological surgeries. Inclusion criteria were women underwent surgeries like caesarean sections, abdominal & vaginal hysterectomies. Exclusion criteria were genitourinary fistula due to malignancy, radiation & infections. The data was retrieved from the ward record on a proforma, & results were tabulated.

Result: The type of injuries were; Vesico vaginal Fistula 21 cases, Uretero Vaginal Fistula 3 cases, unilateral ureteric ligation 3 cases, & one each case of Bilateral ureteric ligation, Ureteral trans-section & Vesico uterine fistula. All patients of vesico vaginal fistula repaired abdominally, & 7 patients with trigonal or more distally placed fistula were managed vaginally. Out of these 7 patients fistula recurred in 3 patients in 5-7 days following surgery. They were treated later on. Surgery was successful in all cases of uretero vaginal fistula, & Vesico uterine fistula. All cases of ureteral ligation had a smooth post operative period and showed a perfect renal function at follow up IVU.

Conclusion: Injuries to urinary tract may occur during obstetrical & gynaecological surgeries. These iatrogenic injuries impose a great impact on physical & mental condition of patient & her family . Therefore it is mandatory for the obstetrician and gynecologist to pay careful attention to the anatomy of the urinary tract in order to avoid such iatrogenic injuries.

Key words: Iatrogenic urological Injuries, Obstetric & Gynecological surgeries.

INTRODUCTION:

Injuries to urinary bladder & ureter are not uncommon complication after obstetrical & gynaecological surgeries\(^1\). Injury to urinary tract in medical practice was first described on 1030 AD in the opus called Al –Kanoun. It was earlier observed by Derry in the mummy of Henhenit who lived in the court of King Mentuhotep 11 on 2050 BC\(^4\). The estimated incidence of such injuries range from 0.4 to 2.5% for non malignant conditions\(^1\). The development of urogenital fistula & urinary leakage from vagina after surgery is the source of misery for the patient, with anxiety & sense of the failure for the surgeon. Development of anuria after surgery demand immediate attention to the patient\(^4\). Early diagnosis & in time management of these injuries greatly effect the outcome. Failed primary surgery produce anxiety for surgeon and social limitation & distress for the
Keeping all these facts in view we conduct the current study the frequency, types, management & outcome of various urological injuries received in the department after surgery. The data in the study highlights the importance of careful surgery in order to avoid such iatrogenic injuries.

**MATERIAL AND METHOD:**

During the study period 4488 cases were operated (table-1) & out of them 30 female with age range from 17-60 years had different type of trauma to urinary bladder or ureters following surgeries like cesarean section & hysterectomies both abdominal & vaginal (table-2). These patients were managed in department of obstetrics & gynaec/urological departments Peoples University of Medical & Health Sciences for Girls Nawabshah during 1st Jan 2007 to 31st Dec 2009, all the data was collected on a proforma & results were tabulated.

**PRESENTATION OF PATIENTS:**

Patients with vesico vaginal fistula presented with total urinary incontinence 7 days to 1 year after offending surgery. Patient with uretero vaginal fistula presented 10 days to 2 years following offending surgery with history of continuous dribbling inspite of having normal voiding. Patient with unilateral ureteral ligation presented with loin pain and or cystic renal mass on affected side. Bilateral ligation produce anuria & were refferred within 24 hours. Patient of ureteral trans-section was diagnosed and managed during surgery.

**DIAGNOSTIC WORK UP:**

It includes careful history taking, thorough physical examination including thorough vaginal examination, 3 swab & dye test were performed, ultrasonography of kidneys, ureters, and bladder, plain x-ray examination, & intravenous urogram (IVU) were performed when indicated. Urethrocystoscopy was performed in all cases to see the size, site, and number of fistulae. Out of 21 vesico vaginal fistula 14 had supra trigonal & 7 had trigonal and sub trigonal fistulae. In cases of uretero vaginal fistula, ureteral canulation and or retrograde ureteral pyelography were done by ureteric catheter in cases of uretero vaginal fistula, & cases of ureteral ligation to determine the site of ureteral injury.

**MANAGEMENT:**

Vesico vaginal fistula were treated with definitive repair in all cases, we follow the late repair concept, so deferred repair surgery until 10-12 weeks after offending operation who presented earlier.

14 cases of supra trigonal fistula were repaired abdominally. 7 patients with trigonal & sub trigonal fistula were repaired through vaginal approach. Out of 3 patients of uretero vaginal fistula 2 were left sided and one was right sided. Ultrasonography & cystoscopic ureteral catheterization done to determine the site of injury. In unilateral cases lower ureter was exposed by oblique inguinal muscle cutting incision of affected side and for one bilateral case midline incision was used.

One patient of ureteral trans-section on left side was detected during surgery & spatulated end to end anastmoseses over D-J stent was done with 5/0 vicryl suture. One patient with vesico uterine fistula was managed by careful dissection and closure of uterus with omental patch.

**FOLLOW UP:**

Patient were follow upto 6 months following definitive surgical correction of urological injuries. Follow up includes history taking, physical examination, USS, IVU and cystoscopy when indicated.

**RESULT:**

The type of injuries were: Vesico Vaginal Fistula 21 cases, Uretero Vaginal Fistula 3 cases, unilateral ureteric ligation 3 cases, & one each case of Bilateral ureteric ligation, Ureteral trans-section & Vesico uterine fistula. All patients of vesico vaginal fistula repaired abdominally were dry in immediate postoperative and subsequent follow up. 7 patient with trigonal or more distally placed fistula were managed vaginally. Out of these 7 patients fistula recurred in 3 patients in 5-7 days following surgery. They were treated later on.

Surgery was successful in all cases of uretero vaginal & vesico uterine fistula. They were dry through out and their post operative IVU showed normal morphology & functions of upper tract. All cases of unilateral & bilateral ureteral ligation run a smooth post operative and showed a perfect renal function at follow up IVU.

**DISCUSSION:**

Our study includes only the patients due to obstetric & gynecological surgery. While genital urinary fistula due to any other causes were excluded.

There is a general agreement that when an advertent injury to bladder or ureter is detected during surgery, immediate repair is optimal treatment. In contrast when is delayed some prefer an immediate repair while other prefer repair to be delayed. The classical procedure is to delay repair for several months preferably 3-6 month & to attempt a definitive repair. This policy was

### TABLE:1

**MAJOR OBSTETRIC AND GYNAECOLOGICAL PROCEDURES PERFORMED DURING YEAR 2007 TO 2009**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CESAREAN SECTION</th>
<th>HYSTERECTOMY Including cesarean Hysterectomy</th>
<th>Vaginal</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1250</td>
<td>90</td>
<td>48</td>
<td>1388</td>
</tr>
<tr>
<td>2008</td>
<td>1208</td>
<td>150</td>
<td>60</td>
<td>1418</td>
</tr>
<tr>
<td>2009</td>
<td>1440</td>
<td>152</td>
<td>90</td>
<td>1682</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>3898</td>
<td>392</td>
<td>198</td>
<td>4488</td>
</tr>
</tbody>
</table>
The most common type was vesicovaginal fistulae, all the cases were successfully treated by surgery. As these injuries are preventable there fore it is mandatory for gynecologist & obstetrician to pay careful attention to the anatomy of the urinary tract and catheterization of the bladder prior to abdominal or vaginal operation on pelvic organ in order to avoid such iatrogenic injuries.

**TABLE-2:**

<table>
<thead>
<tr>
<th>Type of injuries</th>
<th>Offending surgeries</th>
<th>Abdominal Hystrectomy</th>
<th>Caesarean Section</th>
<th>Vaginal Hystrectomy</th>
<th>Percentage ( % )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vesico vaginal Fistula</td>
<td></td>
<td>12</td>
<td>08</td>
<td>01</td>
<td>70</td>
</tr>
<tr>
<td>Uretero vaginal Fistula</td>
<td></td>
<td>02</td>
<td>01</td>
<td>00</td>
<td>10</td>
</tr>
<tr>
<td>Ureteral Ligation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unilateral</td>
<td></td>
<td>02</td>
<td>01</td>
<td>00</td>
<td>10</td>
</tr>
<tr>
<td>Bilateral</td>
<td></td>
<td>01</td>
<td>00</td>
<td>00</td>
<td>3.33</td>
</tr>
<tr>
<td>Ureteral Trans-section</td>
<td></td>
<td>01</td>
<td>00</td>
<td>00</td>
<td>3.33</td>
</tr>
<tr>
<td>Vesico Uterine Fistula</td>
<td></td>
<td>00</td>
<td>01</td>
<td>00</td>
<td>3.33</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>18</td>
<td>11</td>
<td>01</td>
<td>30(100%)</td>
</tr>
</tbody>
</table>

**REFERENCES:**