

## Iatrogenic Urological Lesions Secondary to Gyneco-Obstetric Surgery

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### Abstract

### Original Research Article

**Introduction:** The aim of this study was to analyze the epidemioclinical aspects of iatrogenic urological lesions, to describe the anatomical lesions and to establish a link between surgery and these lesions. **Materials and methods:** Descriptive and retrospective study carried out in the urology department of Sikasso hospital from January 2016 to December 2018. **Results:** In total, 26 patients suffering from iatrogenic urological lesions secondary to gyneco-obstetric surgery were recruited, ie 2.86% of our activities and 17.74% of female urogenital lesions. Average age: 31, 88 ± 11, 54 years old; Average age at 1st marriage: 15.00 ± 1.87 (12 - 20). Almost all of our patient was out of school, homemaker, in unpaid jobs and 83.33% from rural Sikasso. Seventeen patients (65, 38%) were 1.55 m shorter and of these 25% had not received antennal care. Labor stagnation (mean duration: 47, 22 ± 20, 48 hours) was the main indication with 90.47% of stillbirths. The main complaint (92, 30%) of our patients was leakage of urine, followed by abdominal-lumbar pain and abdominal distension associated with anuria. Urogenital fistulas (91.66%); urinary tract infection (20.83%) and acute renal failure 11.53% were common complications. The most common causal operation (76.91%) was cesarean section, often performed by general practitioners. The bladder was more frequently (65, 40%) affected by these injuries than the ureter (34, 60%). Regarding the surgical approach, an open transvesical fistulorrhaphy in two planes or a vesicoureteric reimplantation was performed. The result was excellent in 88, 46% of cases and bad in 11 and 53%. **Conclusions:** Iatrogenic urologic complications of gyneco-obstetric surgery were not uncommon. Early diagnosis and appropriate management could improve its prognosis. The preventive measures are based on the promotion of girls' education and socio-economic life, good antennal care and the continuing training of health care providers in charge of managing obstetric emergencies.

**Key words:** urogenital fistulas, iatrogenic lesion, labor stagnation, urine leakage, urogenital surgery.

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## INTRODUCTION

Iatrogenic urologic lesions (LUI) are traumatic lesions of the urinary tract caused accidentally during surgery. They are among the major complications of Gyneco-Obstetric surgery (Gynecologic Obstetrics) [1]. Along with the efforts made by our health authorities to promote improved technical facilities and a reduction in maternal and neonatal mortality rates, its incidence is increasing significantly.

These injuries can not only cause serious physical and psychological consequences, but can also be a source of forensic litigation. The objective of this study was: to analyze the epidemioclinical aspects of

iatrogenic urological trauma following gyneco-obstetric surgery; describe anatomical lesions and relate to these procedures.

## MATERIALS AND METHODS

This was a descriptive retrospective study carried out in the urology department of Sikasso hospital during the period from January 1, 2016 to March 30, 2018. All patients admitted and treated for an iatrogenic urological lesion caused by gynecological or obstetric surgery were included. Non-iatrogenic obstetric urologic lesions and iatrogenic lesions caused by other surgical, endoscopic or radiologic procedures are excluded from this study. Data collection concerned

the following information: age, origin, prenatal follow-up, reason for consultation, causal intervention, type of lesion and its location, as well as repair techniques, etc. Data analysis was performed by SPSS 20 software.

### RESULTS

We collected 26 cases of iatrogenic urological lesions between January 1, 2016 and March 30, 2018, i.e. 2.86% of urological surgical activities and 17.74% of all urological trauma in women. The mean age of our patients was  $31.88 \pm 11.54$  with the extremes of 17 and 70 years. Average age at 1st marriage:  $15.00 \pm 1.87$  (12 - 20). Almost all of the patients were illiterate women, housewives with no income-generating activity, 84.61% from rural communities in Sikasso. Obstetric surgery, namely cesarean section, was the main intervention providing iatrogenic urological lesion. Labor stagnation obstructed labor was the main operative indication with an average labor duration:  $48.25 \pm 20.80$  hours and a stillborn rate estimated at 92.30%. Seventeen patients, or 65.38%, were less than or equal to 1.55 m and 25% of them did not receive prenatal care during the causal

pregnancy. The patients consulted mainly for urine leakage, ie 92.30%; followed by abdomino-lumbar pain or abdominal distension associated with 7.70% anuria. These iatrogenic lesions have progressed to major complications such as: Urogenital fistula (91.66%); urinary tract infection (20.07%) and acute renal failure (11.53%). Simple cesarean section was the most common causal intervention; it is followed by hysterectomy performed during a complicated cesarean section or for uterine fibroids, or 77% and 23.07% respectively. Simple cesarean sections were performed exclusively by general practitioners, while cases of hysterectomy for complicated cesarean sections and uterine fibroids were performed either by a gynecologist alone or accompanied by a surgeon. As lesions, we identified bladder (65.40%) and ureteral (34.60%) lesions. The surgical management consisted of a fistulorrhaphy in two planes by high transvesical way for the bladder lesions; uretero-vesical reimplantation preceded in 2 cases of nephrostomy for ureteral lesions. We had a total cure in: 88.46% of the cases, 11.53% of bad result and one case of death.

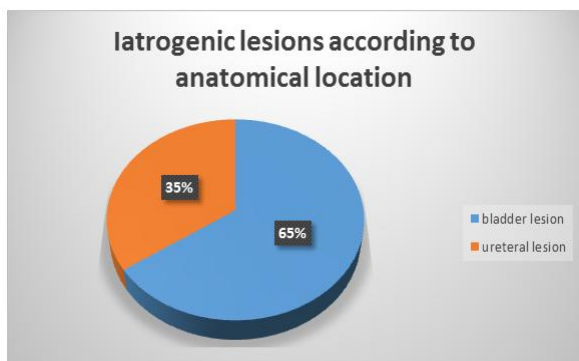
**Table-1: Summary of patients according to the causal intervention and the technical platform**

Type of causal intervention	Effective	Structure	Speaker
Cesarean	20	Cscom Cs districts from SKO region	General practitioner
Cesarean section + Hysterectomy	04	Regional Hospital Csref of Kadiolo	Gynecologist + surgeon Gynecologist
Hysterectomy	02	Regional Hospital	Gynecologist
Total	26		

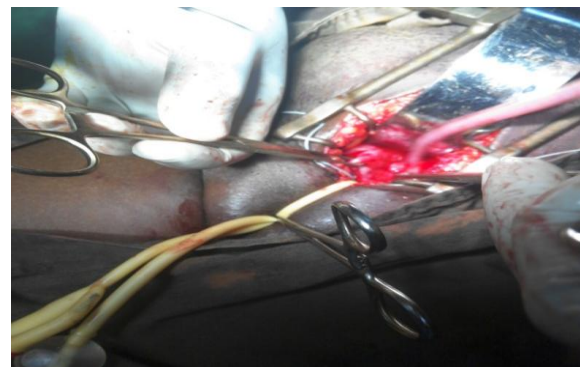
**Table-2: Type of lesion according to the intervention and the operative indication**

causal intervention	Indication	Iatrogenic lesion	Proportion
Cesarean	Dystocia + + P P	TypeVR fistula	53,84%
		TypeVu-v fistula	15,38%
		Vesico-uterine fistula	7,69%
Cesarean section + Hysterectomy	Uterine rupture HRP P P	Bilateral ureteral ligation	7,69%
		TypeVu-v fistula	7,69%
Hysterectomy	Uterine fibromyoma	TypeVR fistula	3,84%
		TypeVu-v fistula	3,84%
Total			100%

Type VR fistula: retro trigonal typeV fistula TypeVu-v fistula: uretero-vesical typeV fistula  
PP: Placenta Previa HRP: Retro-placental hematoma



**Fig-1: Distribution of iatrogenic lesions according to anatomical location**



**Fig-1: Distribution of iatrogenic lesions according to anatomical location**



**Fig-3: UIV image of bilateral nephrostomy on hydronephrosis post ureteral ligation**



**Fig-4: UroTDM of a right ureterovaginal type V fistula, absence of ipsilateral nephrogram and collection of contrast material in the vagina**

## COMMENTS AND DISCUSSION

Compared to others [2], the high prevalence of iatrogenic urological lesions in our series, or 26 cases in two years, could be explained by the fact that our structure, with the technical and financial support of Fistula-Mali, organized campaigns. Free management of obstetric fistulas, hence the massive arrival of women from various horizons, suffering from this pathology. It could also be explained by the insufficient technical platform in terms of prenatal follow-up and adequate management of obstetric emergencies in peripheral areas [3]. The proximity of the lower urinary tract to the female reproductive system means that pelvic surgery is generally at risk of iatrogenic trauma. However, certain factors contribute to accentuate this risk. Our series is in part consistent with the literature [4], especially since it contains certain recognized risk

factors, namely: surgical history and anatomical variations; the operative indications associated with intraoperative hemorrhage as well as the anatomical ignorance and inexperience of the surgeon were found. Unlike the Western series [5,6] where radical hysterectomy for cervical cancer has been shown to be the main causal intervention, the first intervention providing iatrogenic lesion of the urinary tract in our series remains cesarean section. When has the pathology of the lesions, there is a similarity with other African studies namely the predominance of fistulous bladder lesions through which a permanent urine leak occurs, followed by ureteral lesions causing leakage of urine from the outset or secondary [7,8]. The high prevalence of secondary bladder wounds in our context is explained by the fact that: the majority of cesarean sections are performed urgently under general anesthesia; sometimes inexperienced caregivers must be able to act with a certain speed in order to reduce the risk of maternal-fetal complications. Different mechanisms are at the basis of the creation of these bladder lesions: - non-emptying of the bladder and accidental incision of a poorly reclined bladder wall during the section of the lower segment during this cesarean section; -the tear extension of the edges of the hysterotomy during the abrupt extraction of a obstructed presentation; - and the transfixion suture of the bladder wall during hysterorrhaphy followed secondarily by urine leakage after tissue necrosis ischemia. All the authors agree that early diagnosis, especially intraoperative, of ILI followed by adequate management could improve the prognosis. Unfortunately in our series as well as in those of other authors [9,10], these lesions were discovered late causing complications such as: urogenital fistulas, urinary tract infections and acute renal failure including one case of death.

## CONCLUSION

HIM consecutive to Gyneco-obstetrical surgery are not uncommon. Early diagnosis and appropriate management may improve the prognosis. The fight and prevention against these lesions go through education, socioeconomic promotion of girls, good prenatal follow-up and continuous training of providers in the management of obstetric emergencies. Improving the technical platform, continuing education and deepening anatomical knowledge could contribute not only to improving the quality of surgical management of gyneco-obstetrical pathologies but also to a reduction in their perioperative morbidity.

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