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Hysteroscopy in a Secondary Maternity Hospital: Indications, Outcomes, and Complications

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RESEARCH

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Abstract

Background

Hysteroscopy is a cornerstone for diagnosing and treating intrauterine pathologies, yet data from secondary maternity settings are limited.

Objective

To describe the indications, findings, interventions, and complications of diagnostic and operative hysteroscopy in a secondary maternity hospital.

Method

A retrospective study of 332 women undergoing hysteroscopy at Menzel Temim Regional Hospital (level IIB) from January 2018 to December 2020. Data on demographics, indications, imaging, hysteroscopic findings, interventions, and complications were extracted from medical records. Descriptive statistics summarized outcomes.

Result

Mean age was 46.9 ± 9.8 years; 48.6% were premenopausal. Abnormal uterine bleeding (AUB) was the primary indication (48.2%), followed by pelvic pain (27.5%) and infertility (12.7%). Diagnostic hysteroscopy (90.4%) identified endometrial hypertrophy (20.2%), polyps (18.4%), and fibroids (7.8%); 12.6% were normal or inconclusive. Operative hysteroscopy (27.4%) included polypectomy (10.9%), myomectomy (4.8%), and adhesiolysis (3.0%). Complications occurred in 4%, including uterine perforation (1.5%) and hemorrhage (0.6%). General anesthesia was used in 84.6%, and saline irrigation in 89.8%. No TURP syndrome was reported.

Conclusions

Hysteroscopy effectively diagnosed and managed intrauterine pathologies in a secondary setting, with AUB driving most procedures and low complication rates. Integrating ultrasound guidance and local anesthesia could enhance outcomes.

Key Words: Hysteroscopy, Abnormal Uterine Bleeding, Infertility, Secondary Maternity, Complications

Introduction

Hysteroscopy, a minimally invasive procedure, provides direct visualization of the uterine cavity, enabling precise diagnosis and treatment of intrauterine pathologies such as polyps, fibroids, and synechiae[1,2]. Its role spans abnormal uterine bleeding (AUB), infertility, and recurrent pregnancy loss, offering advantages over traditional surgeries like laparotomy[3]. In infertility, hysteroscopy identifies correctable anomalies, enhancing outcomes in assisted reproductive technologies[4]. However, it requires skilled operators and appropriate facilities to ensure safety[5].

While tertiary centers often report hysteroscopy outcomes, secondary maternity hospitals, like level IIB facilities, serve diverse populations with constrained resources, necessitating tailored data. This study aimed to: (1) analyze indications for diagnostic and operative hysteroscopy, (2) describe findings and interventions, and (3) evaluate complications in a secondary maternity setting.

Material and Methods

Study Design and Setting

This retrospective, descriptive study included women undergoing hysteroscopy at Menzel Temim Regional Hospital, a level IIB maternity facility in Tunisia with obstetric, gynecologic, and oncologic services, from January 1, 2018, to December 31, 2020.

Population

We included all women who underwent diagnostic and/or operative hysteroscopy. Exclusions were non-performed procedures (e.g., due to technical issues, anesthesia failure, or cervical stenosis) and cases with missing or inadequately documented records.

Data Collection

Data were extracted from medical records, operative reports, and anesthesia logs using a 30-variable form (Supplementary Appendix). Variables included:

- **Demographics:** Age, origin, hormonal status, education, occupation, socioeconomic status, body mass index (BMI).
- **History:** Medical (e.g., hypertension, diabetes), gynecologic-obstetric (parity, abortions, prior surgeries).
- **Indications:** AUB, infertility, pelvic pain, device removal, miscarriage, tamoxifen monitoring.
- **Imaging:** Ultrasound, hysterosalpingography (HSG), cervical smear, MRI.
- **Procedure:** Hysteroscopy type, findings, interventions, anesthesia, irrigation fluid, duration, complications.

Procedure

Hysteroscopy followed standard protocols, using saline or glycine irrigation. Diagnostic procedures assessed the endometrium and ostia; operative procedures included polypectomy, myomectomy, adhesiolysis, or Maroplasty. General or local anesthesia was used based on availability.

Statistical Analysis

Data were analyzed using SPSS v20.0. Categorical variables were reported as frequencies and percentages, continuous variables as means ± standard deviations (SD) or medians (interquartile ranges) for non-normal distributions. No comparative analyses were performed due to the descriptive design.

Ethics

Anonymity and medical confidentiality were maintained. The hospital ethics committee approved the study. No conflicts of interest were declared.

Results

Study Population

Study Population of 332 women included, mean age was 46.9 ± 9.8 years (range: 31–74). Most (37.8%) were 30–45 years old (Table 1). Rural origin predominated (70.8%), and 48.6% were premenopausal, 42.5% menopausal, and 8.9% perimenopausal. Socioeconomic status was medium (60.5%), low (29.4%), or high (10.1%). Mean BMI was normal in 49.6%, overweight in 27.8%, and obese in 17.4%.

Medical History

No medical history was reported in 69.8%; hypertension (17.4%) and diabetes (7.2%) were common (Table 1). Mean parity was 3.4 ± 3.2; 33.8% had prior spontaneous abortions, 1.2% voluntary terminations. Menstrual cycles were regular in 89.5%. Surgical history included cesarean (12.0%), tubal ligation (4.1%), and ectopic pregnancy repair (2.7%).

Procedure Details

General anesthesia was used in 84.6%, local in 15.4%. Mean procedure time was 23.5 ± 8.1 minutes. Saline irrigation predominated (89.8%), with a mean volume of 1,500 ± 500 mL.

Complications

Complications occurred in 4%, including cervical tears (0.9%), false passages (0.6%), uterine perforations (1.5%), hemorrhage (0.6%), and endometritis (0.3%). No TURP syndrome was reported.

Discussion

This study highlights hysteroscopy's utility in a secondary maternity setting, with AUB as the primary indication (48.2%), consistent with global trends[6,7]. Endometrial hypertrophy (20.2%) and polyps (18.4%) were prevalent, aligning with FIGO classifications of AUB etiologies (e.g., polyps, leiomyomas)[8]. Infertility-related hysteroscopy (12.7%) identified treatable anomalies like synechiae and Mara, supporting its role in improving reproductive outcomes[4,9]. Recurrent miscarriage cases (3.9%) benefited from Maroplasty, echoing studies showing enhanced live birth rates post-resection[10].

Operative hysteroscopy (27.4%) effectively addressed polyps and fibroids, with polypectomy (10.9%) mirroring high success rates in literature[11]. Complications (4%) were low, with perforations (1.5%) comparable to reported rates (1–1.4%)[12]. The absence of TURP syndrome reflects careful fluid management, though saline's dominance (89.8%) suggests resource-driven preferences over glycine.

General anesthesia (84.6%) predominated due to limited anesthesiologist availability, contrasting with outpatient settings favoring local anesthesia[13]. Lack of intraoperative ultrasound guidance, noted as a limitation, may have contributed to perforations, as echoguidance reduces risks[14]. Retrospective design and incomplete records risked selection bias, but the large sample (332) and multi-source data enhanced reliability.

Future improvements include adopting echoguidance, standardizing patient selection, and exploring local anesthesia to reduce costs. Prospective studies could assess long-term outcomes, particularly fertility and quality of life post-hysteroscopy.

Conclusion

Hysteroscopy at a secondary maternity hospital effectively diagnosed and treated intrauterine pathologies, primarily for AUB, with low complication rates. Polyps and

endometrial hypertrophy were common, managed successfully via polypectomy and biopsy. Integrating ultrasound guidance and optimizing anesthesia could further enhance safety and efficacy, supporting hysteroscopy's role in resource-limited settings.

Abbreviations

AUB: Abnormal Uterine Bleeding
IUD: Intrauterine Device
BMI: Body Mass Index
HSG: Hysterosalpingography
FCU: Cervical Smear
TURP: Transurethral Resection of Prostate

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DISCLOSURES

Consent for publication

Written informed consent was obtained from the patient for publication and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Availability of supporting data

Not applicable

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Ethical approval

Not applicable. Our institution requires no ethical approval for case reports

Competing interests

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Tables

Table 1: Patient Characteristics (N=332).

Variable	Value
Age (years), mean ± SD	46.9 ± 9.8
Hormonal status, n (%)	
Premenopausal	162 (48.6)
Menopausal	141 (42.5)
Perimenopausal	29 (8.9)
Origin, n (%)	
Rural	235 (70.8)
Urban	97 (29.2)
Socioeconomic status, n (%)	

Low	98 (29.4)
Medium	201 (60.5)
High	33 (10.1)
BMI, n (%)	
Normal	165 (49.6)
Overweight	93 (27.8)
Obese	57 (17.4)
Medical history, n (%)	
None	232 (69.8)
Hypertension	58 (17.4)
Diabetes	24 (7.2)
Parity, mean ± SD	3.4 ± 3.2

Indications

AUB was the leading indication (48.2%), including menorrhagia (27.1%) and metrorrhagia (21.1%), followed by pelvic pain (27.5%), infertility (12.7%; 9.3% primary, 3.4% secondary), recurrent miscarriage (3.9%), intrauterine device (IUD) removal (7.8%), and tamoxifen monitoring (2.4%) (Table 2).

Table 2: Indications for Hysteroscopy (N=332).

Indication	n (%)
Abnormal uterine bleeding	160 (48.2)
Menorrhagia	90 (27.1)
Metrorrhagia	70 (21.1)
Pelvic pain	92 (27.5)
Infertility	42 (12.7)
Primary	31 (9.3)
Secondary	11 (3.4)
Recurrent miscarriage	13 (3.9)
IUD removal	26 (7.8)
Tamoxifen monitoring	8 (2.4)

Imaging

Ultrasound was performed in 89.1%, identifying endometrial hypertrophy (49.3%), fibroids (12.5%), and polyps (12.8%). HSG in 31 infertility cases showed polyps (12.9%), fibroid-polyp combinations (22.5%), or normal findings (38.7%). Cervical smears (57.5%) were normal (55%) or showed dystrophy (16.7%). MRI in 8 cases confirmed adenomyosis (6 cases) or uterine anomalies.

Hysteroscopy Findings

Diagnostic hysteroscopy (90.4%) was performed alone in 72.6% and followed by operative procedures in 17.7%; 9.6% had operative hysteroscopy only. Findings included endometrial hypertrophy (20.2%), polyps (18.4%), fibroids (7.8%), synechiae (6.3%), and IUDs (6.9%); 12.6% were normal or inconclusive (Table 3).

Table 3: Diagnostic Hysteroscopy Findings (N=300).

Finding	n (%)
Normal/inconclusive	42 (12.6)
Endometrial hypertrophy	67 (20.2)
Polyp	61 (18.4)
Fibroid	26 (7.8)
Synechiae	21 (6.3)
IUD	23 (6.9)
Adenomyosis	17 (5.1)
Endometritis	11 (3.3)
Marum	4 (1.3)

Interventions

Diagnostic procedures included endometrial biopsy (28.3%), polypectomy (5.7%), and IUD removal (6.3%). Operative hysteroscopy (27.4%) comprised polypectomy (10.9%), myomectomy (4.8%), endometrial ablation (6.0%), adhesiolysis (3.0%), and Maroplasty (1.3%) (Table 4).

Table 4: Hysteroscopic Interventions (N=332).

Intervention	n (%)
Diagnostic	
Endometrial biopsy	94 (28.3)
Polypectomy	19 (5.7)
IUD removal	21 (6.3)
Synechiae lysis	9 (2.7)
Operative	
Polypectomy	36 (10.9)
Myomectomy	16 (4.8)
Endometrial ablation	20 (6.0)
Adhesiolysis	10 (3.0)
Maroplasty	4 (1.3)

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