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# Inguinal Endometriosis in a Nulliparous Woman Mimicking an Inguinal Hernia: A Case Report with Literature Review

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Data Interpretation D  
Manuscript Preparation E  
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**Patient:** Female, 33-year-old  
**Final Diagnosis:** Inguinal endometriosis  
**Symptoms:** Groin pain  
**Medication:** —  
**Clinical Procedure:** Exploration of inguinal canal  
**Specialty:** Surgery

**Objective:** Rare disease


**Background:** Endometriosis is a common gynecological disorder occurring in around 10% of women of reproductive age. Inguinal endometriosis is a rare condition; however, it should be considered in the differential for inguinal masses in women of reproductive age. Usually, it occurs after implantation of endometrial tissue during previous surgical procedures. Patients with inguinal endometriosis are often multiparous women with a history of previous gynecological or obstetric surgery. It represents a diagnostic dilemma, as it is often misdiagnosed as other inguinal pathologies.

**Case Report:** Herein, we report a case of a 33-year-old nulliparous woman with left groin pain for 2 years increasing in the severity during menstruation. A physical examination revealed a 1.5-cm left inguinal mass. Ultrasound showed an ill-defined speculated solid hypoechoic left inguinal mass measuring 1.6×1.4 cm. Computed tomography (CT) of the pelvis revealed a left inguinal mass measuring 1.7×1.2 cm, demonstrating central hypo-attenuation with thickening of the round ligament. Exploration of the inguinal region revealed an adherent mass to the round ligament and floor of the canal, which was excised completely with a safety margin. The inguinal canal floor was strengthened using proline mesh. Histopathological examination of the mass confirmed the diagnosis of left inguinal endometriosis.

**Conclusions:** Inguinal endometriosis is a rare clinical entity mimicking other common inguinal conditions. A high index of suspicion is crucial for its preoperative diagnosis, especially in the presence of an inguinal mass associated with cyclic changes in size and pain severity. Its standard management is surgical excision.

**Keywords:** Chronic Pain • Endometriosis • Hernia, Inguinal • Menstruation • Parity

Full-text PDF: <https://www.amjcaserep.com/abstract/index/idArt/934564>

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## Background

Endometriosis is a common gynecological disorder, with an estimated incidence of 10% in women of reproductive age [1]. It typically involves intra-pelvic organs and peritoneum, but can also affect any extra-pelvic organs [2]. It commonly occurs after implantation of endometrial tissue during previous pelvic surgical procedures [3].

Inguinal endometriosis is a rare clinical entity that was first reported in 1896 by Cullen. Its incidence is not estimated, as there are only around 50 cases reported in the literature. It represents a diagnostic dilemma as it is often misdiagnosed as other inguinal pathologies such as inguinal hernia, soft tissue tumors, and inguinal lymphadenopathy [3-5]. Most of the reported cases are managed surgically without preoperative imaging or biopsy [6]. Herein, we report a case of left inguinal endometriosis in a virgin nulliparous middle-age woman with no previous gynecological procedures, mimicking an inguinal hernia.

## Case Report

A 33-year-old nulliparous woman reported having left groin pain radiating to the left thigh and aggravated by menstruation that lasted for 2 years prior to her presentation. She had regular menstrual cycles and denied any gynecological symptoms suggestive of endometriosis such as dysmenorrhea or dyspareunia. She was otherwise healthy with no previous abdominal or pelvic surgeries or any gynecological interventions. She never received hormonal therapy or contraception and she was not on any regular medications. Upon physical examination, she had a 1.5-cm left inguinal mass, tender on palpation and adherent to the underlying tissue. Ultrasonography of the abdomen and pelvis showed an ill-defined speculated solid hypoechoic left inguinal mass measuring 1.6×1.4 cm in diameter. The uterus and ovaries were within normal limits. Computed tomography (CT) of the pelvis revealed a central hypo-attenuation left inguinal mass measuring 1.7×1.2 cm in diameter and thickening of the left round ligament (**Figure 1**). There were no other identified lesions, or suspicion for endometriosis, malignancy, or inguinal lymphadenopathy. Based on the presentation, examination, and imaging, left inguinal hernia was one of our differential diagnoses.

The patient underwent left inguinal canal exploration that revealed a 1.5-cm mass adherent to the round ligament and floor of the canal. The mass was excised completely with a 0.5-cm safety margin. The inguinal canal floor was repaired and strengthened with proline mesh. The patient tolerated the procedure well and was discharged in good condition.



**Figure 1.** Computed tomography (CT) of the pelvis showing left inguinal lesions measuring 1.7×1.2 cm (arrowhead).

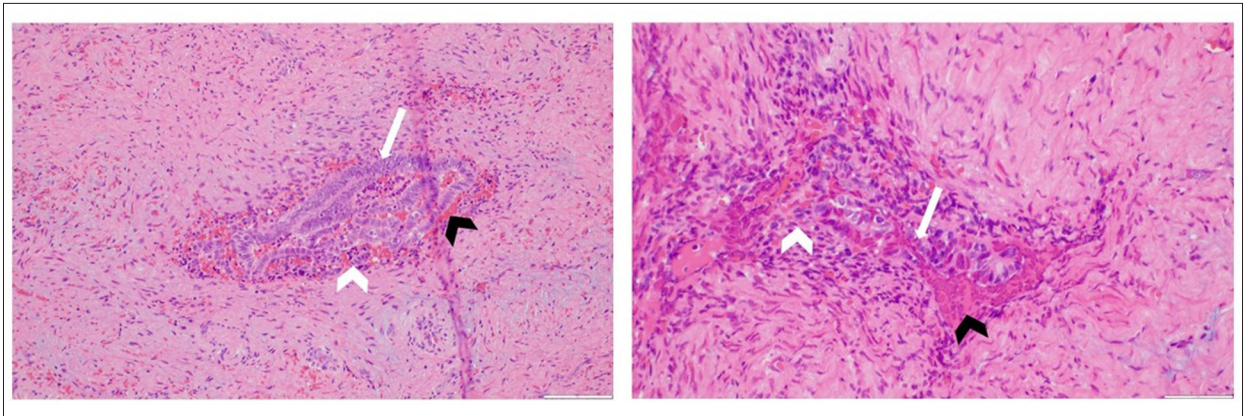
The mass was sent for histopathological examination. Macroscopically, the excised mass was 3.5×3×1.5 cm in size, and consisted of fibrous tissue, with a cut section showing hemorrhagic areas. Histopathological examination showed multiple foci of endometrial glands surrounded by endometrial stroma embedded within the fibrous tissue (**Figure 2**). Postoperatively, the patient was followed up in surgery and gynecology out-patient clinics. She had no recurrences. There was no need for further imaging or postoperative hormonal therapy according to the consultant gynecologist.

## Discussion

Endometriosis is characterized by the presence of normal endometrial tissue including glands and stroma at sites other than the uterine cavity. The ovaries are the most commonly affected organ, accounting for 96% of cases. Extra-pelvic endometriosis is much less commonly seen but can involve any organ [2].

Patients with inguinal endometriosis are often multiparous women with a history of previous gynecological or obstetric surgery [7,8]. We performed an extensive review of the English literature using the search terms “inguinal endometriosis”, “groin endometriosis” and/or “extra-pelvic endometriosis” in the title, abstract, and/or keywords of articles indexed in the Medline, Scopus, and Google Scholar databases, which is summarized in **Table 1**. Only 29 cases of inguinal endometriosis have been reported in nulliparous women similar to our case [3-49].

Patients usually present with a palpable inguinal swelling that is often associated with cyclic pain and change in size. Cyclic



**Figure 2.** Histopathology sections showing multiple foci of endometrial glands (white arrows) surrounded by endometrial stroma (white arrowheads) and numerous red blood cells (black arrowheads).

exacerbation of symptoms is a typical feature for endometriosis that is often missed during the initial assessment [9,10]. A history of dysmenorrhea, dyspareunia, and infertility may also be present, indicating concomitant pelvic endometriosis [10-14]. However, most patients, including this case, have regular menstrual cycles, which can be a misleading point in the clinical assessment [8,9]. Inguinal endometriosis is more common on the right side. This is believed to be associated with the presence of the sigmoid, which places pressure on the left inguinal area, acting as a preventive measure [8]. Our patient had left-sided inguinal endometriosis, which is less common, as only 13 cases in the literature review were reported on the left side [3-49].

Inguinal endometriosis mimics a wide variety of inguinal conditions such as inguinal hernia, hemangioma, lymphadenopathy, and hydrocele of canal of Nuck [3-5]. The preoperative diagnosis of inguinal endometriosis is difficult owing to its rarity and inconclusive imaging findings. In the literature, there is no comparative study assessing the efficacy of different imaging modalities in such cases. On ultrasonography, inguinal endometriosis often shows a hypoechoic unilocular or multilocular cyst that is difficult to distinguish from other inguinal region pathologies such as lymph nodes and simple cysts [5,11,16,50].

CT may not be helpful in confirming the diagnosis of inguinal endometriosis, but it can be used to exclude other possible differential diagnoses [14,17]. However, it did not confirm the diagnosis of -inguinal endometriosis in this case. Magnetic resonance imaging (MRI) is the most specific and sensitive imaging modality for the diagnosis of endometriosis in general. MRI can detect iron particles in the hemosiderin present in the endometrioma, making it a better tool for diagnosing endometriosis than the other modalities [10,16]. The typical appearance of inguinal endometriosis is similar to pelvic endometriosis on MRI, showing high intensity on T1-weighted images and hypointensity on T2-weighted images [17,51]. However,

the majority of reported cases in the literature have reported inconclusive MRI results for diagnosing inguinal endometriosis. The MRI findings were commonly atypical and non-specific for endometriosis; therefore, the diagnosis of inguinal endometriosis cannot be established [11]. A case series involving 20 patients diagnosed with inguinal endometriosis showed that the majority of patients have a mixed hyper- and hypointensity of both T1- and T2-weighted images (61.1% and 50%, respectively) [18].

Preoperative fine-needle aspiration cytology (FNAC) is diagnostic for endometriosis [19,20]. However, it is rarely performed, as most patients are treated surgically with a preoperative diagnosis of incarcerated inguinal hernia or other inguinal pathologies. The final diagnosis is confirmed by histopathological examination of the excised mass showing endometrial glands and stroma [8,19]. In our patient, CT findings did not suggest endometriosis, and an inguinal hernia was still one of the differential diagnoses. Therefore, preoperative FNAC was not done, as it could have injured the contents of the hernial sac.

It is common for patients with inguinal endometriosis to have co-existing inguinal hernia or hydrocele of canal of Nuck. The management of both conditions is surgical [5,21,22,52]. The surgical management for inguinal endometriosis requires radical excision to decrease the rate of recurrence [52]. However, most patients are managed surgically before being diagnosed with endometriosis; therefore, the radical surgical resection is not done in most cases without evidence of recurrence on follow-up [3,12,23].

Patients with inguinal endometriosis often have concomitant pelvic endometriosis. It is recommended to refer patients for complete gynecological assessment postoperatively [16,21,22]. Laparoscopic evaluation of pelvic endometriosis in patients with inguinal endometriosis is recommended if there is clinical evidence of pelvic endometriosis such as dysmenorrhea,

**Table 1.** Clinical data of patients with inguinal endometriosis from published literature.

	Year	No of reported cases	Age/ parity/ location	Presentation	Duration	Menstrual/ obstetric history	Surgical history
1	2021 Swatesutipun V, et al [24]	1	34 Unknown Right	Groin mass with cyclical pain	2 years	Regular	NA
2	2021 Skarpas AS, et al [25]	1	42 Unknown Right	Groin mass, cyclical pain	3 years	NA	NA
3	2020 Nigam VK, et al [26]	1	40 Multiparous Right	Painful groin mass, no cyclical change	1 month	Normal, regular cycle	CS
4	2020 Basnayake O, et al [3]	1	27 Unknown Right	Painful groin mass, no cyclical change	4 months	Dyspareunia, infertility	no
5	2020 Zihni İ, et al [27]	1	31 Multiparous Right	Painful groin mass, no cyclical change	1 year	NA	C.S
6	2020 Fujikawa H, et al [4]	1	42 Unknown Right	Groin pain	1 year	NA	NA
7	2019 Thomas JA, et al [28]	1	23 Unknown Right	Painful groin mass, no cyclical change	1 year	NA	NA
8	2019 Fong KN, et al [23]	1	41 Multiparous Right	Groin mass, no cyclical change	1 month	Dyspareunia, infertility	no
9	2019 Azhar E, et al [29]	1	33 Multiparous Right	RLQ pain	2 days	Endometriosis infertility	Laparoscopic excision of pelvic endometrioma
10	2019 Nagama T, et al [30]	1	41 Unknown Right	Painful groin mass, no cyclical change	10 years	NA	Right inguinal hernia repair
11	2019 Raviraj S, et al [31]	1	30 Unknown Right	Painful groin mass, cyclical pain	5 months	Infertility	NA
12	2019 Arakawa T, et al [18]	20	Avg. 25-46 Nulliparous 17/20 Multiparous 3/20 Right 13/20 Left 5/20 Bilateral 2/20	Groin pain 20/20 Groin mass 14/20 Cyclical variation in symptoms in 16/20	NA	Ovarian endometrioma 11/20 Dysmenorrhea 14/20	C.S 1/20 Laparotomy 1/20 Laparoscopy 3/20 No past surgical history 15/20

**Table 1** *continud.* Clinical data of patients with inguinal endometriosis from published literature.

	Year	No of reported cases	Age/ parity/ location	Presentation	Duration	Menstrual/ obstetric history	Surgical history
13	2018 Wolfhagen, et al [11]	9	28 unknown right	Painful groin mass, no cyclical change	1 month- 2 years	NA	NA
			36 Nulliparous left	Painful groin mass, cyclical pain		NA	NA
			43 Unknwon Right	Groin mass, no cyclical change		NA	NA
			27 Nuliparous Right	Groin mass, no cyclical change		NA	NA
			30 Nuliparous Right	Groin mass, no cyclical change		NA	NA
			32 Nuliparous Left	Painful groin mass, cyclical pain		Dysmenorrhea, dyspareunia	no
			29 Multiparous Right	Painful groin mass, cyclical pain		NA	CS
			36 Unknwon Right	Painful groin mass, cyclical pain		NA	NA
			32 Unknwon Right	Painful groin mass, cyclical pain		NA	NA
14	2017 Ion D, et al [32]	1	42 Nuliparous Right	Painful groin mass, cyclical change in size and pain	3 months	Infertility	NA
15	2017 Okoshi K, et al [12]	1	44 Multiparous Right	Painful groin mass, cyclical pain	NA	Endometriosis, irregual cycles	laproscopic excision of pelvic endometrioma
16	2016 Kilic mo, et al [33]	1	35 Unknwon Right	Painful groin mass, cyclical change in size and pain	2 years	Endometriosis	laproscopic excision of pelvic endometrioma
17	2016 Tsuchie H, et al [34]	1	45 Multiparous Right	Painful groin mass, cyclical pain	1 year	NA	NA
18	2015 Husain F, et al [7]	1	32 Multiparous Right	Painful groin mass, cyclical change in size and pain	2 years	NA	CS
19	2015 Pandey D, et al [9]	1	39 Multiparous Left	Painful groin mass, cyclical change in size and pain	6 months	Normal, regular cycle	CS



**Table 1** *continud.* Clinical data of patients with inguinal endometriosis from published literature.

	Year	No of reported cases	Age/ parity/ location	Presentation	Duration	Menstrual/ obstetric history	Surgical history
20	2014 Albutt K, et al [5]	1	23 Unknwon Left	Painful groin mass, nausea, fever and chills	4 days	NA	no
21	2014 Kim DH, et al [13]	1	40 Nuliparous Right	Painful groin mass, cyclical pain	2 years	Regualr, menorrhagia	no
22	2014 Borghans RA, et al [35]	1	28 Unknwon Right	Painful groin mass, cyclical change in size and pain	1 year	NA	NA
23	2013 Al-Ibrahim NT [36]	1	29 Nuliparous Right	Painful groin mass, cyclical change in size	2 years	Normal, regular cycle	NA
24	2013 Stojanovic M, et al [6]	1	40 Unknwon Right	Painful groin mass, cyclical pain	2 years	NA	Myomectomy
25	2013 Prabhu R, et al [8]	1	49 Multiparous Left	Painful groin mass, cyclical change in size	6 months	Normal, regular cycle	CS
26	2012 Rajendran S, et al [37]	1	36 Unknwon Left	Painful groin mass, cyclical change in size and pain	3 years	Hystrectomy	Hystrectomy
27	2011 Wong WS, et al [19]	1	48 Multiparous Right	Painful groin mass, cyclical pain	8 weeks	Metomenorrhagia	NA
28	2009 Wang CJ, et al [14]	1	35 Unknwon Left	Painful groin mass, no cyclical changes	6 months	Regular cycle with dysmenorreha	NA
29	2009 Apostolidis S, et al [38]	3	36 Multiparous Right	Groin mass, gradually enlarging	1 year	Normal, regular cycle	NA
			37 Nuliparous Right	Cyclic groin pain	3 year	Dysmenorreha	NA
			41 Multiparous Right	Painful groin mass, no cyclical changes	4 months	Endometriosis	Bilateral oopherectomy for endometriosis
30	2008 Kaushik R, et al [39]	1	37 Multiparous Right	Painful groin mass, cyclical pain	5 years	NA	CS, excision of a similar mass without pathology
31	2007 Mashfiqul MA, et al [21]	1	37 Unknwon Right	Painful groin mass, no cyclical changes	2 months	NA	NA

**Table 1** *continud.* Clinical data of patients with inguinal endometriosis from published literature.

	Year	No of reported cases	Age/ parity/ location	Presentation	Duration	Menstrual/ obstetric history	Surgical history
32	2007 Hagiwara Y, et al [10]	1	28 unknwon right	Painful groin mass, cyclical change in size and pain	7 months	Endometriosis, dysmenorrhea	Laprosopic left ovarian cystectomy, adhesiolysfor endometriosis
33	2007 Ducarme G, et al [22]	1	28 Multiparous right	Groin mass, cyclical change in size and pain	6 months	Normal, regular cycle	CS+hernia repair
34	2006 Ku J, et al [40]	1	46 Multiparous right	Groin and RLQ pain	2 days	Normal, regular cycle	NA
35	2005 Licheri S, et al [16]	1	29 Nuliparous right	Painful groin mass, cyclical change in size and pain	1 year	Endometriosis, dysmenorreha on hormonal therapy	NA
36	2005 Kapan M, et al [41]	3	39 unknwon right	Painful groin mass, cyclical change in size	5 years	NA	NA
			42 unknwon right	Groin mass, gradually enlarging	4 years	NA	NA
			51 unknwon left	Groin mass, no cyclical changes	7 years	NA	NA
37	2002 Hagiwara Y, et al [17]	1	40 Multiparous right	Painful groin mass, no cyclical changes	2 years	Endometriosis	Laproscopy
38	2001 Boggi U, et al [42]	2	35 Multiparous right	painful mass in labium, cyclical pain	months	NA	CS
			30 unknwon right	Painful groin mass, cyclical pain	4 months	NA	NA
39	2000 Ling CM, et al [43]	1	46 Multiparous right	Painful RLQ mass, cyclical change in size and pain	4 months	Regular, dysmenorrhea	no
40	1996 Freed KS, et al [20]	1	45 Multiparous right	Groin mass, no cyclical changes	several years	Normal, regular cycle	NA
41	1994 Goh JT, et al [44]	1	22 Unknwon Right	Painful groin mass, cyclical change in size and pain	2 years	Normal, regular cycle	NA
42	1994 Imai A, et al [45]	1	39 Unknwon Right	Painful groin mass, cyclical change in size and pain	1 year	NA	NA

**Table 1** *continud.* Clinical data of patients with inguinal endometriosis from published literature.

	Year	No of reported cases	Age/ parity/ location	Presentation	Duration	Menstrual/ obstetric history	Surgical history
43	1991 Mitchell AO, et al [46]	1	24 Unknwon Right	Painful groin mass, no cyclical changes	4 months	NA	NA
44	1985 Quagliarello J, et al [47]	1	24 Multiparous Right	Painful groin mass, no cyclical changes	3 weeks	Normal, regular cycle	NA
45	1983 Brzezinski A, et al. [48]	1	41 Nuliparous Right	Painful groin mass, gradually enlarging	1 year	Normal, regular cycle	NA
46	1978 Clausen I, et al [49]	1	29 Unknwon Right	Painful groin mass, cyclical pain	4.5 years	Normal, regular cycle	NA
47	1956 Dormandy TL, et al [15]	3	38 Multiparous Right	Painful groin mass, cyclical change in size and pain	15 years	Normal, regular cycle	Right tubal pregnancy
			49 Nulliparous Right	Painful groin mass, cyclical change in size and pain	3 months	Normal, regular cycle	no
			40 Nulliparous Right	Painful groin mass, cyclical pain	3-4 years	NA	NA
	Pre-operative diagnosis	Imaging modalities/ findings/ accuracy		Pre-operative FNAC	Operation	Hernia presence and repair	Follow up/ further management
1	Nuck's canal cyst	US, MRI Groin cystic swelling Inconclusive		NA	Excision of mass	No	NA
2	Inguinal hernia	NA		NA	Excision of mass	No	NA
3	Incarcerated right inguinal hernia f	US, CT Incarcerated inguinal hernia Inconclusive		NA	Excision of mass	Yes	NA
4	Hydrocele of canal of nuck	US Groin cystic swelling Inconclusive		NA	Excision of mass	Na	Asymptomatic OCP
5	Inguinal hernia with cystic lesion	US Inguinal hernia, Groin cystic swelling Inconclusive		NA	Excision of mass	Yes	Asymptomatic
6	Inguinal hernia versus lymphadenopathy	US, MRI Groin mass Inconclusive		NA	Excision of mass with wide surgical margin	Yes	Asymptomatic
7	Inguinal endometriosis	MRI Inguinal endometriosis Diagnostic		NA	Excision of mass	No	NA



**Table 1** *continud.* Clinical data of patients with inguinal endometriosis from published literature.

	Pre-operative diagnosis	Imaging modalities/ findings/ accuracy	Pre-operative FNAC	Operation	Hernia presence and repair	Follow up/ further management
8	Inguinal hernia and abscess	NA	NA	Incision of drainage of the mass with excision of the fibrous wall of the mass	No	Asymptomatic
9	Ovarian torsion, incarcerated inguinal hernia, endometrioma	CT, MRI Suspected femoral hernia Inconclusive	NA	Excision of mass and round ligament	Yes	Asymptomatic
10	NA	MRI Inconclusive	NA	excision of mass	No	Asymptomatic
11	Inguinal hernia	US Groin cystic swelling, chocolate cyst Not conclusive	NA	excision of mass	No	NA
12	NA	18/20: US, Inconclusive 13/20: CT, inguinal mass 18/20: MRI	NA	6/20 excision of mass and round ligament 3/20 TAH BSO and excision of mass	No	3/20 OCP 1/20 recurrence after 8 m
13	NA	US, MRI Inconclusive	NA	Excision of mass	Yes	Cyclical pain around scar
	Inguinal hernia or endometriosis	US Inguinal hernia versus endometriosis Inconclusive	NA	Excision of mass	Yes	NA
	Leiomyoma	US, MRI Leiomyoma Inconclusive	NA	Excision of mass	No	Irregular menstrual cycle
	Inguinal LN or sabecious cyst	US Inguinal LN Inconclusive	Endometriosis	Excision of mass	No	Asymptomatic
	NA	NA	NA	Excision of mass	No	NA
	Cyst of nuck or lymph node	US, MRI Inguinal LN versus groin cystic swelling Inconclusive	NA	Excision of mass	Yes	Endometriosis, infertility
	Inguinal hernia	US Inguinal hernia Inconclusive	NA	Excision of mass	Yes	NA
	Cyst of nuck	US Groin cystic swelling Inconclusive	NA	Excision of mass	No	NA
	Incarcerated inguinal hernia	US, MRI Incarcerated inguinal hernia Inconclusive	Inconclusive	Excision of mass	No	Irregular menstrual cycle

**Table 1** *continud.* Clinical data of patients with inguinal endometriosis from published literature.

	Pre-operative diagnosis	Imaging modalities/ findings/ accuracy	Pre-operative FNAC	Operation	Hernia presence and repair	Follow up/ further management
14	Inguinal or femoral hernia	NA	NA	Excision of mass and round ligament	yes	Asymptomatic
15	Hydrocycele, endometriosis, incarcerated hernia	CT Groin cystic swelling Inconclusive	NA	Excision of mass and round ligament	no	Asymptomatic
16	Incarcerated Inguinal Hernia	US, MRI Groin cystic swelling Inconclusive	NA	Excision of mass with wide margin	no	Asymptomatic
17	Desmoid Tumor	MRI Desmoid tumor Inconclusive	NA	Excision of mass	no	Cyclic pain
18	Incarcerated Incisional Hernia And Endometrioma	MRI Groin mass Inconclusive	NA	Excision of mass	no	Asymptomatic
19	Inguinal Endometriosis	US, MRI Groin mass Inconclusive	Endometriosis	Excision of mass and round ligament	no	Asymptomatic
20	Inguinal Hernia	US, CT Groin cystic swelling Inconclusive	NA	Excision of mass	yes	OCP
21	Hemangioma, AV malformation	US Groin cystic swelling Inconclusive	NA	Excision of mass and round ligament	no	Asymptomatic OCP
22	Inguinal hernia, endometriosis	MRI Inguinal hernia versus inguinal endometriosis Inconclusive	NA	Excision of mass	NA	Asymptomatic
23	NA	US Unremarkable Inconclusive	Inconclusive	Excision of mass	NA	Cyclic pain
24	NA	NA	NA	Excision of mass	NA	Asymptomatic
25	Inguinal hernia, lipoma, neurofibroma, desmoid tumor, primary lymphoma	US Groin cystic swelling Inconclusive	NA	Excision of mass	no	Asymptomatic
26	Endometriosis	US Groin mass Inconclusive	Endometriosis	Patient refused surgical management	NA	Asymptomatic
27	Endometriosis	US unremarkable Inconclusive	Endometriosis	Excision of mass	no	Asymptomatic
28	Inguinal endometriosis	US, CT Groin cystic swelling Inconclusive	Endometriosis	Excision of mass	NA	Laparoscopy OCP

**Table 1** *continud.* Clinical data of patients with inguinal endometriosis from published literature.

	Pre-operative diagnosis	Imaging modalities/ findings/ accuracy	Pre-operative FNAC	Operation	Hernia presence and repair	Follow up/ further management
29	Inguinal hernia	NA	NA	Excision of mass	No	NA
	Inguinal hernia	NA	NA	Excision of mass	Yes	NA
	Inguinal hernia	NA	NA	Excision of mass	No	NA
30	Desmoid tumor	US Groin cystic swelling Inconclusive	inconclusive	Excision of mass	no	Laparoscopy
31	Inguinal hernia	US Spigelian hernia Inconclusive	NA	Excision of mass and round ligament	No	Laparoscopy asymptomatic
32	Inguinal hernia, desmoid tumor, hemangioma, endometriosis	CT, MRI Groin mass Inconclusive	NA	Excision of mass and round ligament	No	Asymptomatic
33	NA	US, MRI Groin mass Inconclusive	NA	Excision of mass	Yes	Asymptomatic
34	Irreducible direct inguinal hernia	US, CT Strangulated direct inguinal hernia Inconclusive	NA	Excision of mass	No	Asymptomatic
35	Endometriosis of the round ligament	US, MRI Endometriosis of round ligament Diagnostic	NA	Excision of mass and round ligament	No	Asymptomatic
36	Inguinal hernia	US Inguinal hernia Inconclusive	NA	Excision of mass and round ligament	NA	Asymptomatic
	Inguinal hernia	NA	NA	Excision of mass and round ligament	Yes	NA
	Inguinal hernia	NA	NA	Excision of mass and round ligament	NA	NA
37	Inguinal hernia, dermoid tumor, hemangioma	CT, MRI Groin mass Inconclusive	NA	Excision of mass and round ligament	No	Asymptomatic
38	Extrapelvic endometriosis	US Groin cystic swelling Inconclusive	NA	Excision of lump and heria sac excision	Yes	Asymptomatic
	NA	NA	NA	Excision of mass	Yes	Asymptomatic
39	NA	US Groin cystic swelling Inconclusive	NA	Excision of mass	Yes	Asymptomatic

**Table 1** *continud.* Clinical data of patients with inguinal endometriosis from published literature.

	Pre-operative diagnosis	Imaging modalities/ findings/ accuracy	Pre-operative FNAC	Operation	Hernia presence and repair	Follow up/ further management
40	Endometriosis	US, CT Groin cystic swelling Inconclusive	Endometriosis	Excision of mass	No	Laparoscopy
41	Endometriosis	NA	NA	Excision of mass	No	Asymptomatic
42	Endometriosis	US, MRI Endometriosis Diagnostic	NA	Excision of mass and round ligament	No	Laparoscopy
43	Abscess	NA	NA	Excision of mass	No	NA
44	Right inguinal LN	US Groin cystic swelling Inconclusive	NA	Excision of mass	Yes	Laparoscopy
45	NA	NA	NA	Excision of mass	Yes	NA
46	NA	NA	NA	Excision of mass and round ligament	No	Asymptomatic
47	Endomestriosis of the canal of nuck	NA	NA	Excision of mass and round ligament	Yes	Asymptomatic
	Endomestriosis of the canal of nuck	NA	NA	Excision of mass	Yes	Asymptomatic
	NA	NA	NA	Excision of mass and round ligament	Yes	Asymptomatic

FNAC – fine-needle aspiration cytology; NA – not available; US – ultrasonography; MRI – magnetic resonant imaging; CT – computed tomography; CS – cesarean section; OCP – oral contraceptive pills; RLQ – right lower quadrant of the abdomen; TAH BSO – total abdominal hysterectomy with bilateral salpingo-oophrectomy; PO – postoperative; LN – lymph node

dyspareunia, or infertility [10,11,19,21]. The use of hormonal therapy for inguinal endometriosis is controversial. Its role is more prominent in patients with concomitant pelvic endometriosis. It is sometimes recommended in patients with inguinal endometriosis as an adjuvant therapy after surgical intervention to decrease the risk of reoccurrence [7,18,19,21]. In our case, the patient did not have any clinical evidence of pelvic endometriosis, so she was only given follow-ups with gynecology without the need for diagnostic laparoscopy and hormonal therapy.

## Conclusions

Inguinal endometriosis is a rare clinical entity mimicking other common inguinal conditions. A high index of suspicion is

crucial for its preoperative diagnosis, especially in the presence of an inguinal mass associated with cyclic changes in size and pain severity. FNAC is diagnostic but rarely performed. FNAC for a patient in whom there is a high suspicion of inguinal hernia can injure the contents of the hernia sac. Its standard management is surgical excision. Gynecological assessment is needed pre- and postoperatively to exclude the presence of pelvic endometriosis.

## Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

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