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# Inguinal lymph node presenting as the delayed site of metastasis in early stage endometrial carcinoma: Case report



Shomaila Amir M. Akbar<sup>a</sup>, Mutahir A. Tunio<sup>a,\*</sup>, Wafa AlShakweer<sup>b</sup>, AbdulAziz AlObaid<sup>c</sup>, Mushabbab AlAsiri<sup>a</sup>

<sup>a</sup> Radiation Oncology, Comprehensive Cancer Center, King Fahad Medical City, Riyadh, 59046, Saudi Arabia

<sup>b</sup> Histopathology, Department of Cytogenetics, Pathology, King Fahad Medical City, Riyadh, 11525, Saudi Arabia

<sup>c</sup> Women's Specialized Hospital, King Fahad Medical City, Riyadh, 59046, Saudi Arabia

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## ABSTRACT

**INTRODUCTION:** Inguinal lymph nodes are the frequent sites of metastasis for malignant lymphoma, squamous cell carcinoma of anal canal, vulva and penis, malignant melanoma and squamous cell carcinoma of skin over lower extremities or trunk. Anatomically, endometrial carcinoma is less likely to spread to the superficial or deep inguinal lymph nodes, thus metastatic involvement of these lymph nodes can easily be overlooked.

**CASE PRESENTATION:** Here-in we report a case of a 65-year old Saudi morbid obese female, who presented with left inguinal lymphadenopathy as initial delayed site of metastasis almost 19 months after the initial treatment for FIGO IA endometrial carcinoma. Patient underwent left inguinal lymph node dissection. Histopathology confirmed metastatic endometrial adenocarcinoma, positive for cytokeratin (CK-7), estrogen receptor (ER) and progesterone receptors (PR), negative for CK-20 and CDX2. Following the post-surgery recovery, she was given extended field radiation therapy to para-aortic, pelvis and bilateral inguinal lymph nodes with concurrent cisplatin chemotherapy followed by high dose rate brachytherapy. **CONCLUSION:** Inguinal lymph nodes as delayed site of metastasis in early endometrial carcinoma is extremely rare entity. Incorporation of FDG-PET during the preoperative screening of inguinal nodes may be helpful. The impact of lymph node dissection and adjuvant radiation therapy on survival needs to be established.

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## 1. Introduction

Metastatic spread of endometrial carcinoma is quite predictable, initially through lymphatic spread followed by hematogenous, and direct routes. The most common sanctuaries for endometrial carcinoma are regional lymph nodes (internal, external and common iliac), ovaries, lung, and peritoneum [1]. It is very uncommon for endometrial carcinoma to metastasize in inguinal lymph nodes [2].

Recent data from a large surgical series of 266 patients who underwent total abdominal hysterectomy (TAH), bilateral salpingo-oophorectomy (BSO) and systematic pelvic and para-aortic lymphadenectomy for endometrial cancer from 1993 to 2010 has reported extremely low incidence of inguinal nodes metastasis (0.38%) [3].

Here in we present a case report of 65-year old female, who presented in our tertiary care hospital with painful left inguinal lymphadenopathy as initial delayed site of metastasis 19 months after the surgical treatment for FIGO IA endometrial carcinoma.

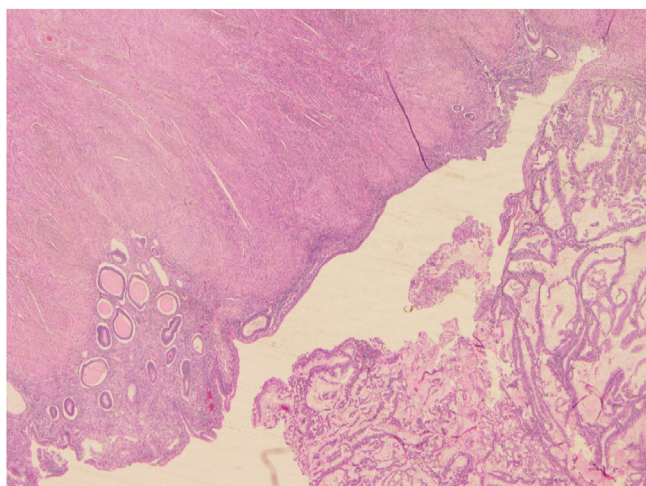
## 2. Case report

A 65-year-old Saudi morbid obese woman (body mass index = 41 kg m<sup>2</sup>) was diagnosed with endometrial carcinoma in March 2014. She underwent total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH and BSO), without lymph node dissection (LND). Histopathology revealed endometrioid adenocarcinoma of 3 cm in size, grade III, in lower uterine segment (LUS) and invading less than 50% of myometrium. Lymph-vascular space invasion (LVSI) was also positive (Fig. 1). Cervix, fallopian tubes and ovaries were unremarkable. She was staged according to the International Federation of Gynecology and Obstetrics (FIGO) staging system 2009 as FIGO IA. After TAH/BSO, patient lost to follow up without any adjuvant radiation therapy.

In October 2015, she presented with the history of left groin painful lump for three months, however, she denied any weight

\* Corresponding author.

E-mail addresses: [saakbar@kfmc.med.sa](mailto:saakbar@kfmc.med.sa) (S.A.M. Akbar), [drmutahirtonio@hotmail.com](mailto:drmutahirtonio@hotmail.com), [mkhairuddin@kfmc.med.sa](mailto:mkhairuddin@kfmc.med.sa) (M.A. Tunio), [walshakweer@kfmc.med.sa](mailto:walshakweer@kfmc.med.sa) (W. AlShakweer), [abalobaid@kfmc.med.sa](mailto:abalobaid@kfmc.med.sa) (A. AlObaid), [masiri@kfmc.med.sa](mailto:masiri@kfmc.med.sa) (M. AlAsiri).



**Fig. 1.** Histopathology (hematoxylin and eosin staining) showing poorly differentiated endometrioid endometrial adenocarcinoma with invasion of myometrium less than 50%.



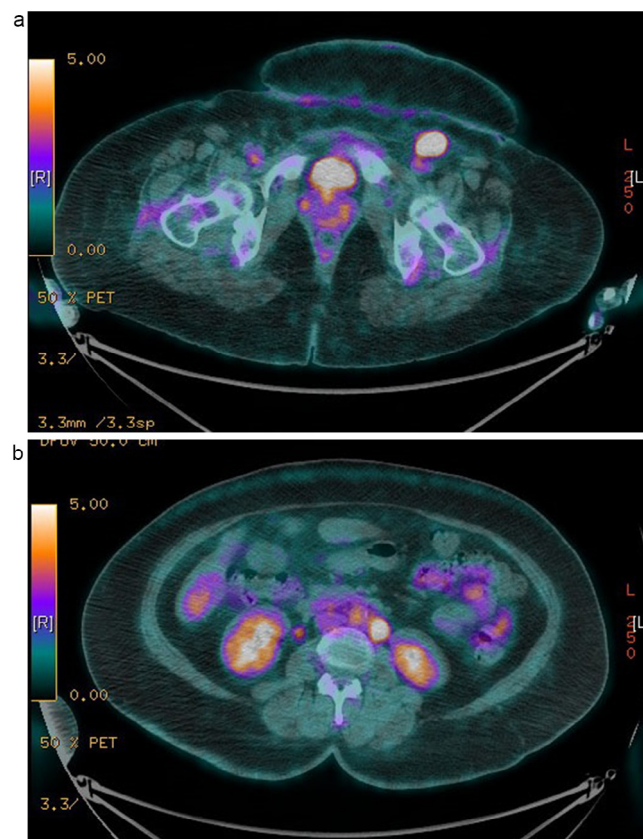
**Fig. 2.** Computed tomography of pelvis showing enlarged left inguinal lymph node of size 2.4 × 2.6 cm.

loss. Physical assessment revealed a large tender, mobile left inguinal mass of size 2.5 × 2.5 cm without any discoloration of overlying skin. The rest of examination was unremarkable.

Abdomino-pelvic computed tomography (CT) scan revealed enlarged left inguinal lymph node of size 2.4 × 2.6 cm (Fig. 2) and right external iliac lymph node 1 × 1.2 cm. CT- positron emission tomography (PET) imaging showed left inguinal node with standardized uptake volume (SUV<sub>max</sub>) 15.2 and the left para-aortic and external iliac nodes with SUV<sub>max</sub> 17.9 (Fig. 3a and b). No other distant metastasis were seen.

Excisional biopsy was negative for any malignancy. Since the suspicion of metastatic disease was high, patient underwent left inguinal LND in December 2015. Specimen was positive for metastatic endometrial carcinoma with immuno-positivity for cytokeratin (CK-7), estrogen receptor (ER) and progesterone receptors (PR) and immuno-negative for CK-20 and CDX2 (Fig. 4a–d).

Patient was recovered very well after surgery. Based on decision of multidisciplinary team (MDT), patient was given postoperative radiation therapy (PORT) to para-aortic, pelvic and bilateral inguinal lymph nodes (45 Gy in 25 fractions @ 1.8 Gy/fraction) followed by boost to left inguinal region (14.4 Gy @ 1.8 Gy/8 fractions to complete 59.4 Gy) with concurrent cisplatin on Day 1 and 22,



**Fig. 3.** CT-PET imaging showing (a) hypermetabolic left inguinal lymph node (SUV<sub>max</sub>=15.2) and (b) hypermetabolic left para-aortic lymph node (SUV<sub>max</sub>=17.9).

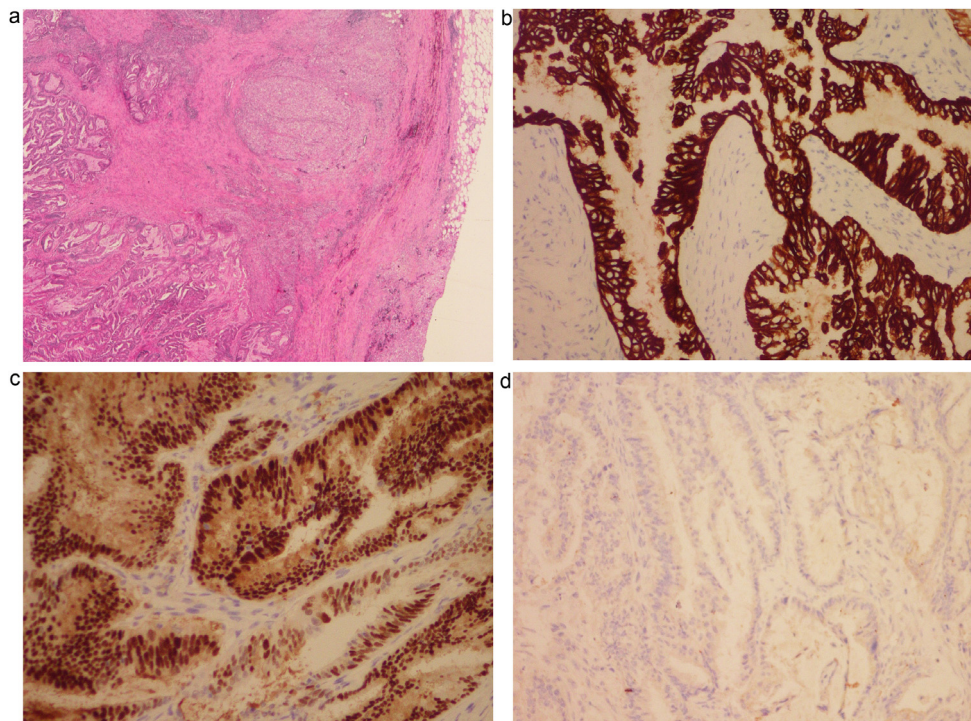
followed by high dose rate (HDR) brachytherapy 15 Gy in 3 sessions. Following completion of PORT in February 2016, she was given duplet chemotherapy carboplatin and docetaxel 3 cycles, which she finished in May 2016. At one year after inguinal resection, patient was doing well without any clinical or radiological evidence of locoregional recurrence and distant metastasis.

### 3. Discussion

Metastatic involvement of inguinal lymph nodes in early stage endometrial carcinoma is extremely rare manifestation, with only four case reports published so far Table 1 [4–7]. The precise mechanism of inguinal node metastasis remains doubtful. However, in first case, inguinal node metastasis was believed to be related with unopposed estrogen stimulation of occult metastasis in inguinal nodes, as that patient was treated with estrogen replacement therapy [4].

In our patient, possible hypotheses of inguinal lymph node involvement are; (a) micro-metastasis inoculation into the lower abdominal scar and subsequently metastasis to the inguinal nodes through superficial lymphatic pathways along the left inferior epigastric artery, or (b) postoperative formation of neo-vascularized channels from tumor bed to inguinal lymph nodes, causing such an unusual spread of FIGO IA endometrial cancer to inguinal nodes [8] or (c) possibility of missing these lymph nodes during initial preoperative screening (especially limitation of physical examination and CT imaging in morbid obese patients). None of previously published case reports have mentioned the radiological evidence of enlarged inguinal nodes prior to surgery. Magnetic resonance imaging (MRI) can be helpful to evaluate these inguinal node metastasis in such morbid obese patients. However, the size and shape





**Fig. 4.** Left inguinal lymph node excisional biopsy showing (a) metastatic endometrioid endometrial adenocarcinoma, (b) positive for cytokeratin (CK-7), (c) progesterone receptors (PR) and (d) negative for CK-20.

**Table 1**  
Previously published case reports of inguinal lymph node metastasis from endometrial carcinoma.

Reported cases	Age (years)	Initial treatment	FIGO stage	Grade	Site and size of inguinal recurrence	Latent period of inguinal recurrence	Treatment
Car et al. [4]	–	TAH/BSO → Estrogen replacement	IA	I	Left 9 × 7 cm	–	LND
Ortac et al. [5]	45	TAH/BSO → observation	IA	I	Right 4 × 5 cm	7 months	LND
Seagle et al. [6]	67	TAH/BSO + pelvic LND → VBT	IB	I	Left 10 × 7.5 cm	14 months	Carboplatin + Paclitaxal x 3 cycles → Pelvic RT 45 Gy in 25 Fr + inguinal LN boost 25 Gy
Wu et al. [7]	55	TAH/BSO + pelvic LND → VBT	–	–	–	–	LND → Pelvic and para-aortic, mediastinal and neck RT 45 Gy in 25 Fr + concurrent Cisplatin → inguinal LN boost → Carboplatin + Paclitaxal x 3 cycles
Present case	65	TAH/BSO → observation	IA	III	Left 2.4 × 2.6 cm	19 months	Pelvic and para-aortic RT 45 Gy in 25 Fr + concurrent Cisplatin D1 and D22 → inguinal LN boost 15 Gy → Carboplatin + Paclitaxal x 3 cycles

**Abbreviations:** TAH/BSO = Total abdominal hysterectomy and bilateral salpingo-oophorectomy; FIGO = International Federation of Gynecology and Obstetrics; LN = lymph node; LND = Lymph node dissection; RT = radiation therapy; VBT = vaginal brachytherapy.

of benign inguinal lymph nodes vary remarkably [9]. PET-CT has shown moderate sensitivity (66.7%) and high specificity (99.4%) for metastatic involvement of lymph nodes in endometrial cancer [10]. Thus incorporation of PET-CT in morbid obese patients can be advantageous.

As per FIGO staging system, inguinal nodes metastasis from endometrial carcinoma are classified as a distant metastases (FIGO stage IVB), and it is regarded as a systemic disease. Due to rarity of this scenario, the impact of inguinal LND followed by PORT in addition to systemic chemotherapy on the survival in these patients is not well known, thus the management is debatable. However, at one year after inguinal LND, our patient was found disease free.

Further, to improve the quality of present surgical case report, we used recent consensus-based guidelines for case reports (SCARE) 14-item checklist [11].

In conclusion, inguinal lymph nodes as delayed site of metastasis in early endometrial carcinoma is extremely rare entity. Due to suboptimal physical examination in morbid obese patients, incorporation of MRI pelvis and PET-CT during the preoperative screening for inguinal nodes may be helpful. However, the efficacy of inguinal LND and PORT in terms of survival benefit needs further investigation.

**Conflict of interest**

Authors have no potential conflict of interest.

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**Ethical approval**

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**Consent**

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**Author's contribution**

Design: MAA.

Data collection: WAS, SAA, AAO.

Manuscript writing: MAT, SAA, AAO.

Manuscript editing: MAA, MAT, WAS.

**Guarantor**

Mutahir A. Tunio.

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