

# Synchronous gynecologic cancer and the use of imaging for diagnosis

## CÂNCER GINECOLÓGICO SINCRÔNICO E O USO DA IMAGEM PARA SEU DIAGNÓSTICO

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### SUMMARY

Endometrial and cervical cancers are the most prevalent gynecologic neoplasms. While endometrial cancer occurs in older women, cervical cancer is more prevalent in young subjects. The most common clinical manifestation in these two gynecological cancers is vaginal bleeding. In the first case, diagnosis is made based on histological and imaging evaluation of the endometrium, while cervical cancers are diagnosed clinically, according to the International Federation of Gynecology and Obstetrics (FIGO). The authors present a case of synchronous gynecological cancer of the endometrium and cervix diagnosed during staging on MRI and confirmed by histological analysis of the surgical specimen.

**Keywords:** Magnetic resonance imaging, endometrial neoplasms, uterine cervical neoplasms, uterine neoplasms.

### INTRODUCTION

Cervical and endometrial cancers are, respectively, the third and fourth most common cancers in women.<sup>1,2</sup> While endometrial cancer affects women in perimenopause, cervical cancer affects young women of lower socioeconomic status.<sup>1,3</sup> The histologic types most commonly found are adenocarcinomas followed by sarcomas in endometrial cancer, and squamous cell (80%) and mucinous carcinomas in cervical cancers.

The most common clinical manifestation in these two gynecologic cancer is vaginal bleeding, although cervical cancer is usually asymptomatic due to a slow progression.<sup>4</sup> When endometrial cancer is clinically suspected, diagnosis is made based on histological and imaging evaluation of the endometrium, while cervical cancers are diagnosed clinically, according to the International Federation of Gynecology and Obstetrics (FIGO).<sup>5</sup> The authors report a case of synchronous tumors of endometrial and cervical cancers in an oncological reference center that was suspected clinically and evidenced on magnetic

resonance imaging (MRI) of the pelvis, discussing the relevant finding for diagnosis.

### CASE REPORT

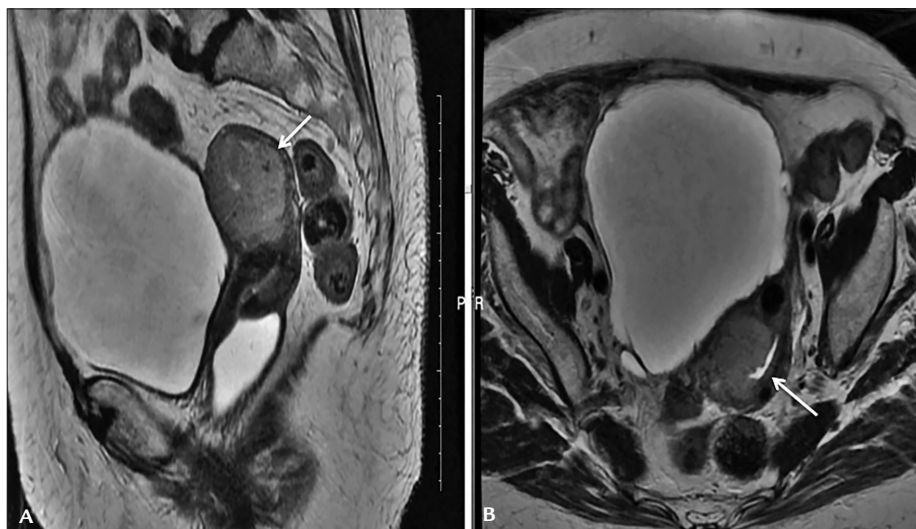
Female 83-year old patient, G3P3AO, menopausal for 33 years, homemaker, born in the state of São Paulo, city of Osasco, admitted in an oncological reference center in May 2012 referring menstrual bleeding 4-5 months before. Personal history includes chronic constipation treated with laxatives regularly, recurrent urinary tract infection, insulin-dependent *diabetes mellitus*, high blood pressure and dyslipidemia. In the family history, the patient mentioned lung cancer in first-degree relatives who were smokers. Physical examination revealed a friable and bleeding lesion on the cervix. As part of the diagnostic workup, the patient underwent pelvic ultrasound, which showed endometrial echo measuring 4 mm, uterine volume of 12.5 cm<sup>3</sup> and bladder walls thickened and trabeculated, and MRI.

MRI revealed endometrial cavity occupied by a iso-intense mass on T1 and slightly hyperintense on T2 com-

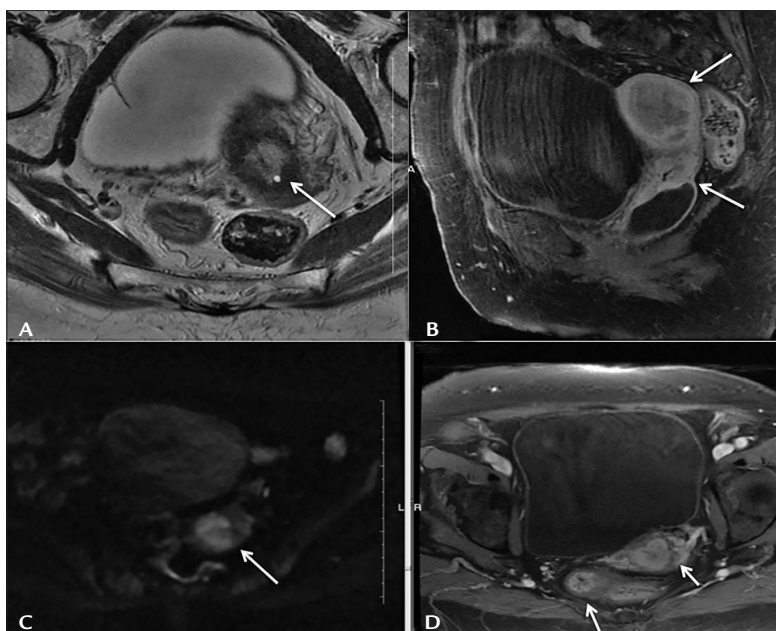
pared to the myometrium, with peripheral enhancement to the contrast dye, measuring approximately 42 x 39 x 37 mm (length x width x AP diameter). There were signs of invasion of the myometrial wall on the right side of the uterus (invasion depth greater than 50% of its thickness, but without evidence of involvement of the uterine serosa) (Figure 1). MRI also showed a second lesion with

signal intensity and contrast-enhanced of similar characteristics to those in the cervical primary site, which went unnoticed on gynecological examination (Figure 2).

Diagnosed with synchronous tumors of endometrium and cervix, the patient underwent hysterectomy with bilateral salpingo-oophorectomy and pelvic lymphadenectomy.



**FIGURE 1** Imaging findings: T2-weighted MRI sequence on sagittal (A) and axial (B) views shows endometrial cavity occupied by slightly hyperintense mass compared to the myometrium, and extension to the right lateral wall of the uterine body (arrow).



**FIGURE 2** Imaging findings: T2-weighted MRI sequence on axial (A) view shows slightly hyperintense lesion occupying the cervix (arrow); T1-weighted MRI sequence with fat saturation after gadolinium injection, sagittal (B) view, two lesions occupying the endometrial (large arrow) cavity and cervix (small arrow) with peripheral enhancement after contrast administration; DWI-weighted (C) T1-weighted sequences with fat saturation after contrast injection (D) reveal lesion with restricted diffusion in the uterine cervix.

Histological analysis revealed a moderately differentiated endometrial serous adenocarcinoma (IB) (Figure 3) and a poorly differentiated squamous cell carcinoma of the cervix (IB) (Figure 3), as well as metastasis to lymph nodes in the pelvic chains (surgical stage IIIC) (Figure 3), with right-sided involvement of endometrial adenocarcinoma and squamous cell carcinoma on the left side.

## DISCUSSION

Endometrial cancer is surgically staged.<sup>6,7</sup> MRI, however, is the tool normally used to refine staging and treatment planning, given that findings of myometrial invasion or uterine extension may modify the surgical indication.<sup>3,5</sup>

Synchronous tumors are infrequent findings, and the most common gynecologic cancers are those of the ovary and uterus. In this case report, a cervical tumor is present simultaneously with endometrial cancer and could be mistaken for an extension of the latter, since endometrial cancer may extend to the cervix.

There are two possible interpretations for these findings: synchronism between IB endometrial carcinoma and IB cervical carcinoma, or stage IIB endometrial carcinoma. Note the importance of correct staging to establish the best approach for each patient. Stage IIB endometrial car-

cinoma has no surgical indication and, therefore, incorrect staging would affect the treatment choice.

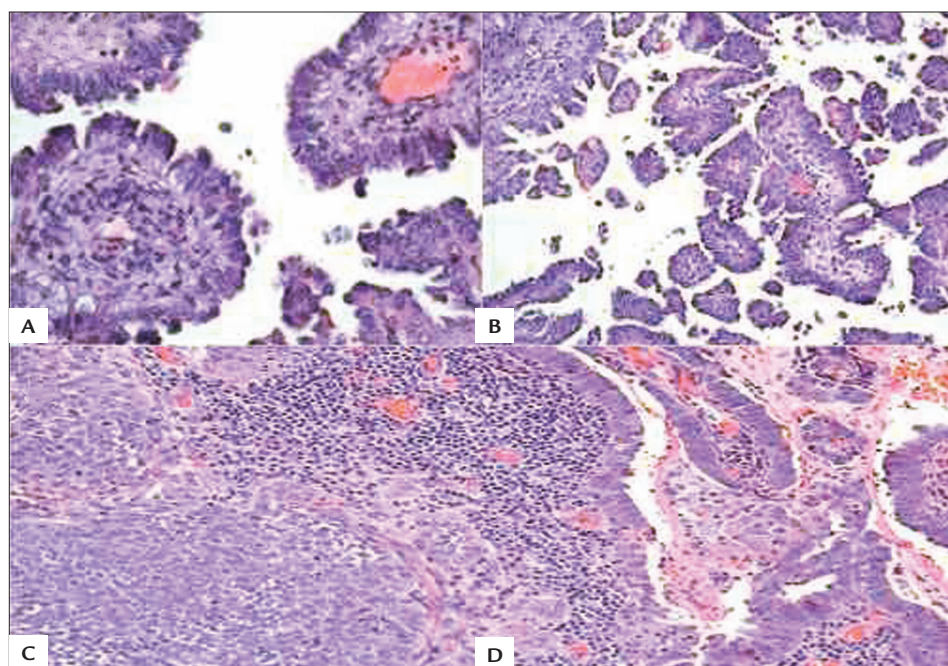
Detection of gynecological tumors is not a role of MRI, but in this case it was important to highlight a clinically unsuspected cervical lesion. Cervical lesions may have endophytic growth, and eventually go unnoticed in the gynecological examination. This explains why the lesion was detected only on MRI in the preoperative examination.<sup>8</sup>

Diffusion weighted imaging (DWI) technique was used, which has recent applications in oncology including tumor detection. It consists in enhancing tissues where there is less mobility of water molecules, such as neoplasms. The imaging study contributed by revealing the lesion in the cervix, another primary tumor in addition to the endometrial tumor previously detected on ultrasound.<sup>3,5,6,8</sup>

Other rare events include: synchronic gynecological tumors, clinically occult cervical tumor and detection of cervical tumor only on MRI.

## RESUMO

Câncer ginecológico sincrônico e o uso da imagem para seu diagnóstico



**FIGURE 3** Findings of pathological anatomy: (A) Serous adenocarcinoma, papillary pattern. The surface is composed of tiny papillary structures with high nuclear grade; (B) Typical squamous cell carcinoma and *in situ* adenocarcinoma with minimal stratification, hyperchromasia and nuclear enlargement; (C) p53 immunohistochemistry positive for lymph node metastasis.

Os cânceres de endométrio e cervical são as neoplasias ginecológicas mais prevalentes. Enquanto o primeiro ocorre em mulheres mais velhas, o segundo é mais prevalente em mulheres jovens. A manifestação clínica mais comum nestas duas neoplasias ginecológicas é o sangramento vaginal. O diagnóstico do câncer de endométrio é feito a partir da avaliação histológica do endométrio e da avaliação por imagem, enquanto o câncer cervical é diagnosticado clinicamente, de acordo com a Federação Internacional de Ginecologia e Obstetrícia (FIGO). Apresentamos um caso de câncer ginecológico sincrônico de endométrio e cervical diagnosticado durante estadiamento por ressonância magnética e confirmado pela análise histológica da peça cirúrgica.

**Palavras-chave:** imagem por ressonância magnética, neoplasias do endométrio, neoplasias do colo do útero, neoplasias uterinas.

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