



# Ovarian Dermoid Cyst Recurrence, 15 Years Later, in the Form of Intra-Abdominal Thyroid Tissue Mass

Valentin Luc, Jr,<sup>1</sup> Michel Canis,<sup>2</sup> Gérard Mage,<sup>2</sup> Nicolas Bourdel<sup>2</sup>

## Clinical Practice Points

- Dermoid cysts are the most frequent benign ovarian tumors.
- Their treatment using laparoscopy might lead to recurrence because of the risk of cyst rupture.
- To our knowledge, our article presents the first report of a case of recurrence of a dermoid cyst

in the form of an intra-abdominal thyroid tissue mass next to the uterus, 15 years after the first surgery, and discusses the means for prevention of recurrence and the subsequent support for this patient.

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## Introduction

Surgery for ovarian cysts represents a daily activity in gynecology. Frequency is difficult to estimate although approximately 32,000 women are surgically treated each year for this reason in France. Approximately 10% to 20% of these cysts are dermoid cysts.<sup>1</sup> The gold standard for their treatment is laparoscopy with a significant reduction in operative morbidity, postoperative pain, analgesic requirement, length of hospital stay, and recovery period compared with laparotomy.<sup>2,3</sup> However, laparoscopy classically involves a greater rate of cyst rupture than laparotomy (28% vs. 15%)<sup>4</sup> despite a safe and standard operative technique.<sup>5</sup>

This is the consequence of a greater rate of specific complications such as spillage, chemical peritonitis (0.2%)<sup>6</sup> and recurrence (7.6%)<sup>7</sup> using laparoscopy.

To our knowledge, we report the first case of recurrence of a dermoid cyst 15 years after the initial surgery in the form of an intra-abdominal thyroid mass mimicking peritoneal carcinomatosis.

## Case Report

Mrs V., 40 years old, had a medical history of 1 intraperitoneal cystectomy using laparoscopy in 1996 (at the age of 25) to

<sup>1</sup>Service de gynécologie-obstétrique et médecine de la reproduction, CHU Caen, Caen, France

<sup>2</sup>Pôle de gynécologie-obstétrique, CHU d'Estaing Clermont-Ferrand, Clermont-Ferrand, France

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Address for correspondence: Valentin Luc, Jr., Service de gynécologie-obstétrique et médecine de la reproduction, CHU Caen, avenue Côte-de-Nacre, 14033 Caen cedex 9, France

Fax: +33231272628; e-mail contact: [luciano\\_valentine@hotmail.fr](mailto:luciano_valentine@hotmail.fr)

treat an ovarian dermoid cyst. No endobag was used during this surgery.

Pathological examination confirmed the dermoid character of the cyst. It contained, among others, some thyroid tissue.

Subsequently, the patient, who presented with major psychological problems, had an irregular follow-up history. In 2008, she underwent transvaginal ultrasound examination, during which a liquid mass of 20 mm with echogenic areas suggestive of a dermoid cyst (Fig. 1) was found. It was still present at 1 month. Because of the benign aspect, we prescribed a magnetic resonance imaging (MRI) scan and a carcinoma antigen (CA)-125 assay with possible surgical treatment in mind. Unfortunately, the patient was lost to follow-up.

In 2011, she underwent transvaginal ultrasound examination which revealed (close to the uterus) a mass, 5 cm in diameter, movable, and hypervascularized, and MRI scan which confirmed the mass was made of the tissue with hemorrhagic changes (Figs. 2 and 3), along with 3 peritoneal tissue lesions, suggestive of peritoneal carcinomatosis (1 behind the right rectus [Fig. 3], 1 next to the cecum, and another under the right part of the diaphragm).

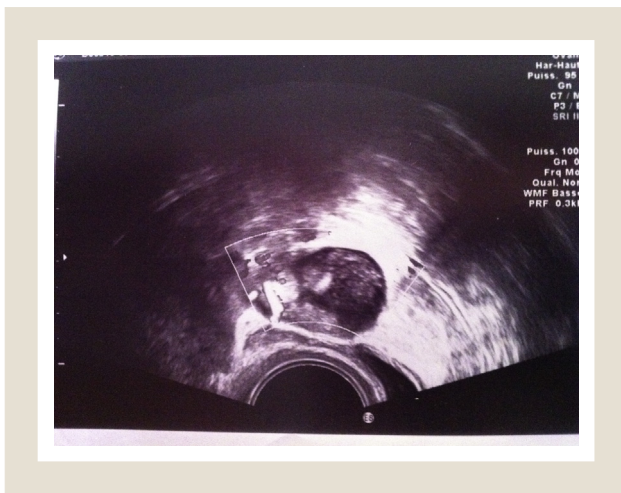
Tumor marker levels (carcinoembryonic antigen, CA 19.9, CA-125) were normal.

In this context, surgical management was decided starting with a laparoscopic pelvic exploration in January 2012.

We found a regular mass incarcerated in the omentum with major neovascularization. Frozen section examination revealed a thyroid goiter.

Surgery was completed with resection of 4 nodules, including the 3 suspicious ones detected on MRI. They were not suspicious

**Figure 1** Transvaginal Ultrasound Picture. Liquid Mass With Echogenic Areas



macroscopically (Fig. 4). The nodule behind the rectus was found using a finger through the suprapubic trocar incision.

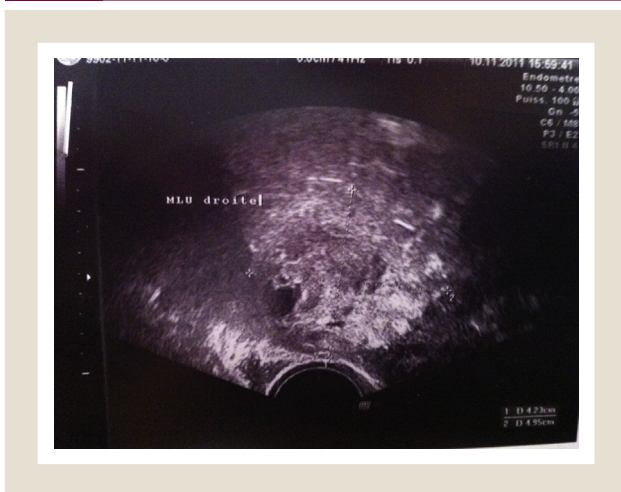
Final histology revealed thyroid tissue, probably benign in all of the samples, with a diagnosis of thyroid follicular carcinoma due to a broken capsule, vascular emboli, or metastasis, which was not present.

Immunohistochemistry revealed typical thyroid cells (with thyroid peroxidase, without Anti-Mesothelioma antibody, galactine, and cytokeratin 19) but was indeterminate as to whether the tissue was benign or malignant.

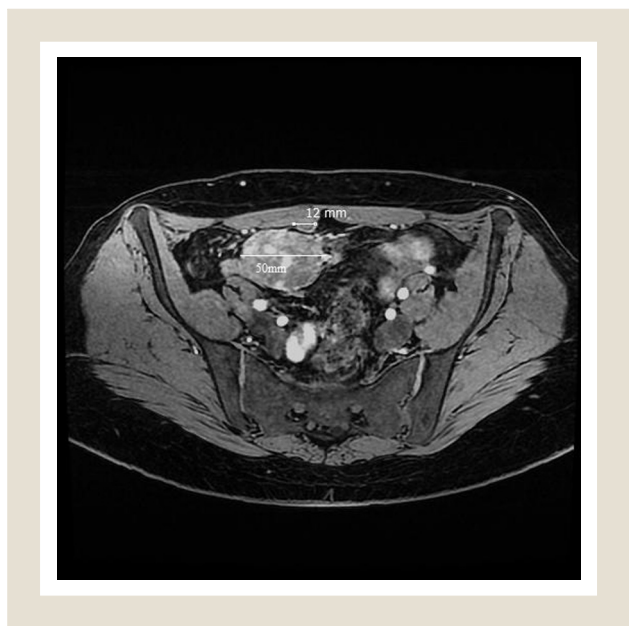
The patient also presented a normal thyroid at ultrasound, a normal thyroid-stimulating hormone (TSH) level, and no clinical signs of hyperthyroidism. Neither thyroglobulin assay nor whole-body scintigraphy with iodine was carried out because of the presence of the thyroid gland. Indeed, the marker binds preferentially and almost totally on healthy tissue.

A whole-body computed tomography (CT) scan was done to search for extraperitoneal signs of the disease, which would indicate possible metastasis of a thyroid cancer.

**Figure 2** Transvaginal Ultrasound Picture. Mass Next to the Uterus of 5 cm in Diameter



**Figure 3** Intra-Abdominal Bulk Measuring 50 mm, and Peritoneal Tissue Lesion Behind the Rectus Measuring 12 mm



No other signs were found in whole-body CT scan, and the morphological aspect and the patient's medical history plead in favor of an intra-abdominal graft secondary to cyst spillage.

In consideration of the benign aspect of the disease, in 6 months, the patient will undergo an additional CT scan to assess evolution.

## Discussion

We report here, to our knowledge, the first case of recurrence of a dermoid cyst in the form of an intra-abdominal thyroid mass mimicking peritoneal carcinomatosis. This case draws attention to 2 issues concerning the treatment of dermoid cysts: recurrence and treatment.

### Recurrence

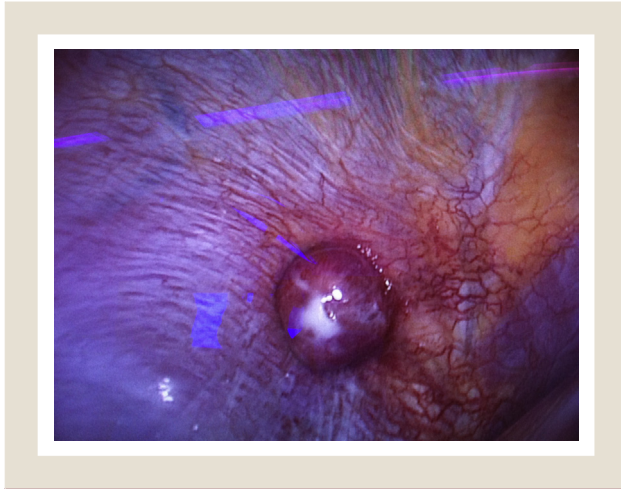
Concerning recurrences, techniques have been developed to reduce the risk of cyst content spillage, which has a frequency of approximately 20% to 40%, according to studies. Since the systematic use of an endobag,<sup>5,6</sup> no case of recurrence or chemical peritonitis occurred for our team. Intracystic puncture before cystectomy could decrease the extent of the spillage and in case of spillage, a generous wash of the abdominal cavity is mandatory.<sup>8,9</sup> Other authors use drainage of the abdominal cavity if cyst rupture occurs,<sup>10</sup> but this technique has not been evaluated to date.

### Treatment

Malignant transformations of thyroid tissues belonging to dermoid cysts are extremely rare. A few cases are reported in the literature.<sup>11,12</sup> The same observation is true concerning intra-abdominal metastasis of thyroid cancers.<sup>13</sup> Their management includes total surgical resection of metastasis, thyroid resection, and irradiation using radioactive iodine until the thyroid scintigraphy results as negative.

# Ovarian Dermoid Cyst Recurrence as Abdominal Thyroid Tissue

**Figure 4** Intraoperative View of a Nodule



In our case, there were strong arguments in favor of benign disease (dermoid cyst recurrence): the history of dermoid cyst spillage, the malignant character not being histologically proven, clear limits with a benign appearance intraoperatively, ultrasound examination and MRI findings not in favor of peritoneal carcinomatosis, normal thyroid ultrasound examination, and a normal TSH level. However, the difference between malignant character (thyroid metastasis) and benign recurrence of a dermoid cyst is histologically difficult to prove beyond all doubt.<sup>14</sup> This patient will be followed clinically and with a CT scan every 6 months for 2 years and then annually.

As of June 2012, there was no recurrence.

## Conclusion

Our case shows that dermoid cyst recurrences can be a problem, but dermoid cyst rupture is difficult to prevent because of the fragility of these cysts. Consequently, it would be useful always

treat as it is described by Folini et al<sup>5</sup>: always use an endobag, and if rupture occurs outside the laparoscope, perform a generous wash of the abdominal cavity to minimize the extent of the spillage. It also shows that we have to be careful when confronted with an atypical appearance of peritoneal carcinomatosis in patients with history of dermoid cyst, especially in case of intraoperative rupture of the cyst.

## Disclosure

The authors have stated that they have no conflicts of interest.

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