



# Fine-Needle Aspiration Biopsy in the Diagnosis of Umbilical Injury, Originated in Stomach, Endometrium and Ovary

Juliana Restrepo<sup>1</sup>, Miguel Roldan<sup>2,3</sup>, Juan Camilo Pérez<sup>2,3,4</sup>, Alejandro Vélez<sup>2,3,4</sup> and Sara M Gil<sup>2\*</sup>

<sup>1</sup>Department of Surgery, Pontificia Bolivariana University, Colombia

<sup>2</sup>Department of Pathology, Dinámica IPS, Colombia

<sup>3</sup>Department of Pathology, University of Antioquia, Colombia

<sup>4</sup>Department of Pathology, Pontificia Bolivariana University, Colombia

## Abstract

The navel is an unusual site to metastasis or endometriosis implants. Endometriosis is the endometrial glandular tissue outside the uterine cavity. An incidence of endometriosis implants after gynecological surgeries in to navel of 0.3% to 1% has been reported. In this report, we presented three cases of endometriosis and two patients with the sister Mary Joseph sign in the umbilicus (it means a metastasis to the navel) with stomach and ovary tumor who were diagnosed by Fine Needle Aspiration (FNA) from the Dinamica Laboratory and at the Pablo Tobón Uribe Hospital in Medellin, Colombia. Fine needle aspiration biopsy is a simple and inexpensive method that allows the diagnosis of endometrial implant lesions and navel metastases.

**Keywords:** Fine-needle aspiration biopsy; Umbilical injury; Metastasis

## Introduction

Endometriosis is a relatively common disease, defined as the presence of functional endometrial tissue outside the uterus [1,2], it affects up to 15% of menstruating women [3,4]. Ectopic endometrial tissue is identified as endometrial glands and stromal tissue usually accompanied by hemosiderin-laden histiocytes. Most of the time, histologic identification of two of the three components could be sufficient for the diagnosis [1]. Commonly involved sites include the pelvic peritoneum and ovaries [3,4], but involvement of extrapelvic sites such as the abdominal wall, umbilicus, gastrointestinal tract, urinary tract, and inguinal region has also been described [5,6].

Fine-needle aspiration may be chosen as the initial approach to determine the nature of the lesion [7]. Due to the rarity and occasional atypical cytological features of extragonadal, extra-pelvic sites, and cutaneous endometriosis, cytologic interpretation on FNA can be quite challenging and could be a diagnostic pitfall [8,9], such as: benign hemorrhagic cyst, follicular cyst, hematoma, endosalpingiosis, and adenocarcinoma, especially in aspirates of intra abdominal, pelvic sites, and effusion fluid samples from hemothorax and hemoperitoneum [10]. We report three cases of endometriosis and two patients with the sister Mary Joseph sign in the umbilicus (it means a metastasis to the navel) with stomach and ovary tumor, diagnosed by FNA in Medellin-Colombia.

## Case Presentation

Three women between 32 and 38 years old with clinical history between 1 and 2 years of evolution of sensation of painful abdominal wall mass. The first patient with a mass in a previous cesarean scar section that was enlarged and it hurt with menstruation; the second and third woman with painful umbilicus nodule, associated with a personal endometriosis antecedent by laparoscopy (Figure 1). One of them with a history of umbilical herniorrhaphy (Figure 2). The first patient was performed an ultrasound in which they report mass in hypogastrium and suggest discard injury neoplastic, reaction of body strange or endometriosis And the third patient was performed a tomography in which they reported a 5 mm diameter image. All FNA They showed glands, histiocytes on a hemorrhagic background with inflammatory infiltrate.

The fourth patient diagnosed with adenocarcinoma of cells in seal ring originated in the stomach with an umbilicus metastasis (the sister Mary Joseph sign) (Figure 3). Her FNA showed many loose and pleomorphic cells with optically empty cytoplasm and nuclei located in the periphery. Finally,

## OPEN ACCESS

### \*Correspondence:

Sara M Gil, Department of Pathology,  
Dinámica IPS, Cl. 27 #45-109 3rd  
Floor, Medellín, Colombia, Tel:  
573022839971;  
E-mail: saritagilh@hotmail.com

Received Date: 05 Jul 2019

Accepted Date: 30 Jul 2019

Published Date: 02 Aug 2019

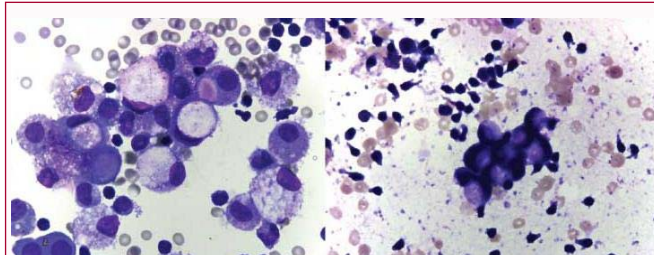
### Citation:

Restrepo J, Roldan M, Camilo Pérez  
J, Vélez A, Gil SM. Fine-Needle  
Aspiration Biopsy in the Diagnosis of  
Umbilical Injury, Originated in Stomach,  
Endometrium and Ovary. *World J Clin  
Pathol.* 2019; 2(1): 1006.

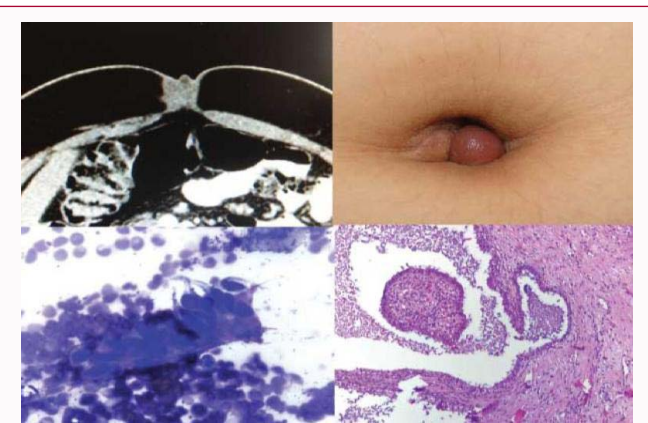
**Copyright** © 2019 Sara M Gil. This is  
an open access article distributed under  
the Creative Commons Attribution  
License, which permits unrestricted  
use, distribution, and reproduction in  
any medium, provided the original work  
is properly cited.



**Figure 1:** Clinical findings: nodule in the umbilicus and cytological findings: hemorrhage and glandular structures, compatible with endometriosis.



**Figure 3:** Seal ring cells, extracted from the umbilicus nodule (Sister Mary Joseph sign).



**Figure 2:** Correlation: tomographic, clinical, cytological and histological findings of endometriosis in the umbilicus.

the fifth patient is a 56-year-old woman with ascites and a history of ovarian cystadenocarcinoma, with a navel injury. Her cytology showed pleomorphic and hyperchromatic cells arranged in papillary architecture.

## Discussion

The use of FNA is controversial. Some authors assert that this technique increases the risk of producing new endometriotic implants in the puncture site and the risk of viscera injury (a differential diagnosis of endometrioma is incisional hernia) [11-12]. However, others defend this technique arguing that is an accurate method to make the diagnosis before the surgery, so it is possible to avoid errors in the approach of the abdominal wall endometriosis scars and helps to plan the best treatment. The use of this technique provides a pathological diagnosis before surgery in cases of diagnostic uncertainty regarding the origin of a mass [13-14]. Malignant change of scar endometriosis is rare. Only 21.3% of cases of malignant transformation of endometriosis occur at extragonadal pelvic sites and 4% in laparotomy scars [15-16].

Therapeutically, wide excision is the treatment of choice in such cases. To sum up, FNA is a safe and effective tool for identification of endometriosis and can obviate the need for diagnostic surgical procedures. Moreover, it can save the patient from undergoing radical treatment. Clinical history and careful interpretation of cytopathological features are necessary for developing an index of suspicion for correct identification of endometriosis over an adenocarcinoma on FNA [17].

In the case of the fourth and fifth patients, the cytology showed seal ring cells in papillary structures that in correlation with the clinical inspection (Figure 3), was an injury named as: Sister Mary

Joseph Nodule; is a form of metastasis to the umbilical region where the majority of cases are metastatic adenocarcinoma malignancies [17,18]. These account for 83% of all malignant tumors in the umbilical region [19]. Cutaneous metastases occur in between 1% and 9% of cases of malignancies, with around 10% affecting the umbilical region [20]. Sister Mary Joseph's Nodule suggests widespread internal neoplasia, usually of the abdominal cavity. The most common primary sites are the gastrointestinal tract (52%) or are gynecological (28%) [21]. In around 15% to 29% of cases the primary site is unknown [22]. Differential diagnoses include umbilical hernia, cutaneous endometriosis, pyogenic granuloma, melanocytic nevus, keloid, melanoma, squamous cell carcinoma and basal cell carcinoma [23-24]. The name of this sign is in honor of Superintendent Nurse at St. Mary's Hospital in Rochester; found that patients with abdominal and pelvic malignant neoplasm occasionally have an umbilical nodule indicating umbilical metastasis [24-26].

In conclusion, it is felt that with the increasing use of FNA of palpable and deep seated lesions, it may not be uncommon in cytologic practice to encounter cases of endometriosis and FNA can be a useful, noninvasive and diagnostic method to render such diagnoses. Furthermore, the study of cell blocks on cytology samples as done in this study is worthwhile in view of the histologic picture that it may provide in a number of cases for a more specific diagnosis. We also feel that a diagnosis of endometriosis on an FNAC sample is possible because of the typical findings as we have described, along with the clinical presentation in the patients. Also, such a diagnosis can obviate the need for an invasive surgical procedure.

## Acknowledgement

The authors would like to acknowledge the Pablo Tobón Uribe Hospital for working hand in hand with Dinamica Ips for the development of this case report.

## Statement of Ethics

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975. Subjects (or their parents or guardians) have given their written informed consent for this case report.

## Funding

This report was supported by the Intramural Research programs of Dinamica IPS, Medellín-Colombia.

## Authors Contribution

Alejandro Velez and Sara Gil conceived of the presented idea, Miguel Roldán, Juan Camilo Pérez and Juliana Restrepo developed

the theory and encouraged to investigate in the literature. All authors discussed the results and contributed to the final manuscript.

## References

1. Blaustein A, Kurman RJ. Blaustein's pathology of the female genital tract. New York: Springer; 2011. Xv, 1391.
2. Barkan GA, Naylor B, Gattuso P, Kullu S, Galan K, Wojcik EM. Morphologic features of endometriosis in various types of cytologic specimens. *Diagn Cytopathol*. 2013.
3. Kim J, Kwon J, Kim H, Park K. Fine-needle aspiration cytology of abdominal wall endometriosis: a study of 10 cases. *Diagn Cytopathol*. 2011;41(12):115-9.
4. Aziz Z, Wang D. Fine-needle aspiration biopsy of endometriosis of the abdominal wall: a potential diagnostic pitfall. *Diagn Cytopathol*. 2011;39(6):443-5.
5. Bulun SE. Endometriosis. *N Engl J Med* 2009;360:268-279.
6. Ecker AM, Donnellan NM, Shepherd JP, Lee TT. Abdominal Wall endometriosis: 12 years of experience at a large academic institution. *Am J Obstet Gynecol*. 2014;211(4):363.e1-5.
7. Vellido-Cotelo R, Muñoz-González JL, Oliver-Pérez MR, de la Hera-Lázaro C, Almansa-González C, Pérez-Sagaseta C, et al. Endometriosis node in gynaecologic scars: A study of 17 patients and the diagnostic considerations in clinical experience in tertiary care center. *BMC Womens Health*. 2015;15:13.
8. Wolf Y, Haddad R, Werbin N, Skornick Y, Kaplan O. Endometriosis in abdominal scars: A diagnostic pitfall. *Am Surg*. 1996;62(12):1042-4.
9. Meyer R. Uebereine adenomatose Wucherung der Serosa in einer Bachnarbe. *Z Geburtshilfe Gynakol* 1903;49:32-41.
10. Fulciniti F, Caleo A, Lepore M, Fortunato A, Vetrani A, Palombini L. Fine needle cytology of endometriosis: Experience with 10 cases. *Acta Cytol*. 2005;49(5):495-9.
11. Steck WD, Helwig EB. Cutaneous endometriosis. *Clin Obstet Gynecol*. 1966;9(2):373-83.
12. Corrêa G, Pina L, Korke H, Guazzelli T, Kenj G, Toledo A. Scar endometrioma following obstetric surgical incisions: retrospective study on 33 cases and review of literature. *Sao Paulo Med J*. 2009;127(5):270-7.
13. Horton JD, DeZee KJ, Ahnfeldt EP, Wagner M. Abdominal wall endometriosis: a surgeon's perspective and review of 445 cases. *Am J Surg*. 2008;196(2):207-12.
14. Vellido-Cotelo R, Muñoz-González J, Oliver-Pérez M, Cristina de la Hera-Lázaro, Cristina Almansa-González, Concepción Pérez-Sagaseta, et al. Endometriosis node in Gynaecologic scars: A study of 17 patients and the diagnostic considerations in clinical experience in tertiary care center. *BMC Women's Health*. 2015;15:13.
15. Sergent F, Baron M, Le Cornec JB, Scotté M, Mace P, Marpeau L. Malignant transformation of abdominal wall endometriosis: A new case report. *J Gynecol Obstet Biol Reprod (Paris)*. 2006;35(2):186-90.
16. Rekhi B, Sugoora P, Patil A, Shylasree TS, Kerkar R, Maheshwari A. Cytopathological features of scar endometriosis mimicking an adenocarcinoma: A diagnostic pitfall. *J Cytol*. 2013;30(4):280-3.
17. Song SJ, McGrath CM, Yu G. Fine-needle aspiration cytology of endometriosis. *Diagnostic Cytopathology*. 2017;45(4):359-63.
18. Urbano FL. Sister Mary Joseph Nodule. *Hosp Physician May*. 2001;44:33-35.
19. Durieux C, Muysoms F, Claeys D. Sister Joseph's nodule umbilical manifestation of intraperitoneal carcinomatosis. *Acta Chir Belg*. 2008;108(4):444-6.
20. Gabriele R, Conte M, Egidi F, Borghese M. Umbilical metastases: current viewpoint. *World J Sur Oncol*. 2005;3(1):13.
21. Fogaça HS, Chagas VLA, Tolentino YFM, Ribeiro VCM, Ximenes LLL. Sister Mary Joseph's nodule: a warning sign for intra-abdominal malignant tumors: A case report. *Rev Bras Ginecol Obstet*. 2003;25:449-52.
22. Dar IH, Kamili MA, Dar SH, Kuchhai FA. Mary Joseph nodule-A case report with review of literature. *J Res Med Sci*. 2009;14(6):385-7.
23. Limmathurotsakul D, Rerknimitr P, Korkij W, Noppakun N, Kullavanijaya P, Rerknimitr R. Metastatic mucinous cystic adenocarcinoma of the pancreas presenting as Sister Mary Joseph's nodule. *JOP*. 2007;8(3):344-9.
24. Pereira WA, Humaire CR, Silva CS, Fernandes LHG. Sister Mary Joseph's Nodule: a sign of internal malignancy. *An Bras Dermatol*. 2011;86(4 Suppl 1):S118-20.
25. Pure B, Meirovitz M, Bayme M, Shaco-Levy R. Sister Mary Joseph's nodule originating from endometrial carcinoma incidentally detected during surgery for an umbilical hernia: a case report. *Arch Gynecol Obstet*. 2006;274(6):385-8.
26. Aich RK, Karim R, Chakraborty B, Dasgupta S, Deb AR. Sister Mary Joseph's nodule. *Indian J Medical and Paediatric Oncology*. 2008;29(2):40-3.