



## Case Report

Miller AM, et al. Ann Case Report 6: 673.

DOI: 10.29011/2574-7754.100673

# Reaction to Ferric Sub sulfate Solution Mimicking Cervical Neoplasia: A Case Report

April M. Miller<sup>1\*</sup>, David I. Shalowitz<sup>1</sup>, Graham Parks<sup>2</sup>, Erica F. Robinson<sup>1</sup><sup>1</sup>Department of Obstetrics and Gynecology, Wake Forest School of Medicine, Winston-Salem, NC, USA<sup>2</sup>Department of Pathology, Wake Forest School of Medicine, Winston-Salem, NC, USA

**\*Corresponding author:** April M. Miller, Department of Obstetrics and Gynecology, Wake Forest School of Medicine, Winston-Salem, NC, USA

**Citation:** Miller AM, Shalowitz DI, Parks G, Robinson EF. (2021) Reaction to Ferric Sub sulfate Solution Mimicking Cervical Neoplasia: A Case Report. Ann Case Report 6: 673. DOI: 10.29011/2574-7754.100673

**Received Date:** 16 June, 2021; **Accepted Date:** 21 June, 2021; **Published Date:** 25 June, 2021

### Abstract

Monsel's solution is a frequently utilized hemostatic agent by Gynecologists after common office procedures. In rare instances, this ferric subsulfate solution can cause a atypical reaction that can mimic the appearance and common presentation of cervical neoplasia. In this report, we present a case of a 57-year-old postmenopausal woman demonstrating an unusual reaction to Monsel's solution after cervical colposcopy with biopsy. She later presented with necrotic-appearing lesions on the cervix and vagina that were concerning for dysplasia, however demonstrated strong positive iron staining on biopsy. Due to the atypical and worrisome appearance, it is essential for providers to be aware of this uncommon reaction.

### Introduction

Screening for cervical dysplasia and high risk Human Papillomavirus (HPV) has become the standard in women's health. These guidelines have been largely developed by the American Society for Colposcopy and Cervical Pathology (ASCCP). With this, cervical cancer incidence has decreased more than 50% over the past 30 years in the United States [1]. Most cases of cervical cancer occur in women who were either not screened or screened inadequately [1].

Based on ASCCP guidelines, certain abnormal cervical cytology results require follow up testing with colposcopy and directed biopsies [2]. Some post-colposcopy hemostatic methods include application of pressure, silver nitrate, Monsel's solution, vasopressin, tranexamic acid, and hemostatic sutures [3]. While these are reasonable, one of the most common utilized hemostatic methods is ferric subsulfate solution, or Monsel's solution (Premier Medical- Plyouth, Meeting, PA). Monsel's solution is often used topically for hemostasis as it is effective, painless, and well tolerated.

### Case Report

A 57-year-old postmenopausal woman presented one

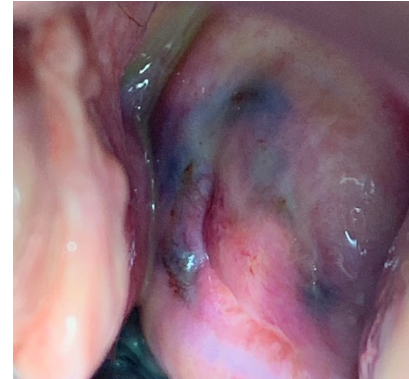
year after an abnormal pap smear (negative for intraepithelial lesion or malignancy, positive HPV 18). The clinical decision to proceed with a colposcopy, repeat cervical cytology via Pap test, and HPV testing was made based on ASCCP recommendations. The colposcopy was satisfactory with full visualization of the transformation zone. Cervical biopsies and an endocervical curettage (ECC) were obtained based on visual findings of atypical vasculature. Due to bleeding at the biopsy sites, Monsel's solution was applied at the conclusion of the procedure. The specimens were sent to pathology, and the cervical biopsies and ECC were both reported as negative for dysplasia. The cervical cytology resulted as atypical squamous cells of undetermined significance (ASC-US) and HPV 18.

Four months post-colposcopy, the patient represented to the office with the complaint of vaginal discharge. Vaginal and cervical examinations demonstrated dark, necrotic appearing lesions on the cervix at 11 o'clock and the vaginal wall (Figure 1). Although the recent colposcopy was reassuring and the cervical biopsies were negative for dysplasia, the lesions were concerning in appearance. After discussion with the patient, the decision was made to repeat biopsies of concerning areas. These biopsies were identified as containing inflammation, hemosiderin, and crystalline material, however they were notably negative for dysplasia and malignancy.



**Figure 1:** Cervicovaginal lesion 4 months s/p ferric subsulfate application. Arrow indicates biopsied lesion.

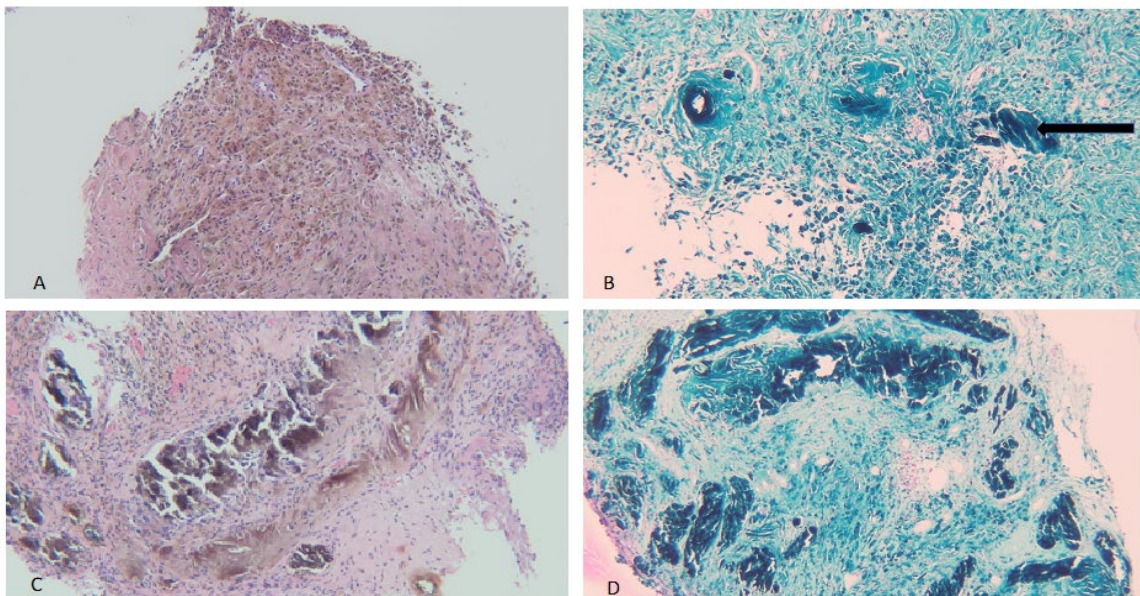
The vaginal discharge spontaneously ceased and she was seen again 1 year later for follow up cervical cytology and HPV cotesting. At this follow up, the lesions were still visible, but notably more pale and gray in appearance (Figure 2). Cervical cytology and HPV cotesting were performed, and the HPV cotesting was again positive for HPV 18. Repeat colposcopy and cervical biopsy resulted in no dysplasia. The patient will return for repeat cervical cytology and HPV cotesting in another year per ASCCP guidelines.



**Figure 2:** Cervix and vagina 1 year following application of ferric subsulfate solution. Arrow indicates location of biopsied lesion.

### Pathologic Findings

After further review of this case additional stains were performed. Sections of the cervix and vagina both demonstrate abundant acellular and amorphous crystalline material as well as hemosiderin within histiocytes and giant cells on hematoxylin and eosin stains (Figure 3 A, C). Prussian blue iron stains show strong positive staining within the amorphous deposits and within histiocytes and giant cells confirming iron rich material consistent with Monsel's solution (Figure 3 B, D).



**Figure 3:** Hematoxylin and eosin stains: Sections of the cervix and vagina both demonstrate abundant acellular and amorphous crystalline material as well as hemosiderin within histiocytes and giant cells (3A, 3C). Prussian blue iron stains show strong positive staining within the amorphous deposits and within histiocytes and giant cells confirming iron rich material consistent with Monsel's solution (3B, 3D). Arrow indicates Prussian blue iron stains.

## Discussion

Cervical cancer screening is recommended for women beginning age 21 and women's health providers need to be aware of the diagnosis and treatment of abnormal results. Colposcopies and ablative procedures (Loop Electrosurgical Excision Procedures and Cold Knife Conizations) are utilized in the diagnosis and treatment of abnormal cervical cytology and HPV testing [2]. There are multiple hemostatic methods utilized after then procedures including Monsel's solution. Here we reported an unusual reaction of the cervix and vagina to Monsel's solution that mimicked the appearance of dysplasia. Our goal is that women's health providers will now know how to approach this abnormal reaction, who to consult (pathologist gynecological oncologist), and what stains to request for appropriate evaluation.

## References

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