Incidental Blue Nevus of the Cervix: A Rare Case Report

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ABSTRACT

Background: Blue nevi are benign melanocytic proliferations, most often cutaneous but rarely reported in extracutaneous sites. Cervical blue nevus is an uncommon incidental histological finding, with very few cases published.

Case Presentation: We report a 54-year-old multiparous woman with heavy menstrual bleeding who underwent total abdominal hysterectomy. Histopathological examination revealed an incidental blue nevus in the cervix, characterized by scattered brown pigment laden macrophages in stroma of subepithelium.

Conclusion: Cervical blue nevus is rare and benign. Recognition is essential to avoid misdiagnosis as malignant melanoma, thereby preventing overtreatment.

Keywords: Blue nevus; Cervix; Melanocytic lesion; Case report; Gynecological pathology

INTRODUCTION

Blue nevus is a benign melanocytic lesion first described by Jadassohn and Tieche in 1906. It typically arises in the skin but has been documented in extracutaneous sites such as the vagina, prostate, spermatic cord, pulmonary hilum, oral mucosa, esophagus, and lymph nodes[1,2]. Cervical involvement is extremely rare.

Proposed pathogenesis includes aberrant migration of neural crest melanocytes into the Müllerian tract during embryogenesis or stromal cell metaplasia[3,4]. Most cervical blue nevi are asymptomatic and detected incidentally during histopathological evaluation of gynecological specimens.

CASE PRESENTATION

A 54-year-old multiparous woman presented with heavy menstrual bleeding. Clinical examination and ultrasound revealed an enlarged uterus with intramural fibroids. Laboratory findings were normal. She underwent total abdominal hysterectomy.

Gross examination : revealed an enlarged uterus, with bosselated surface. Myometrium shows focal areas of trabeculations. The endocervix showed a small blue-black area measuring 0.4×0.3 cm and Nabothian cyst. (Fig 1).

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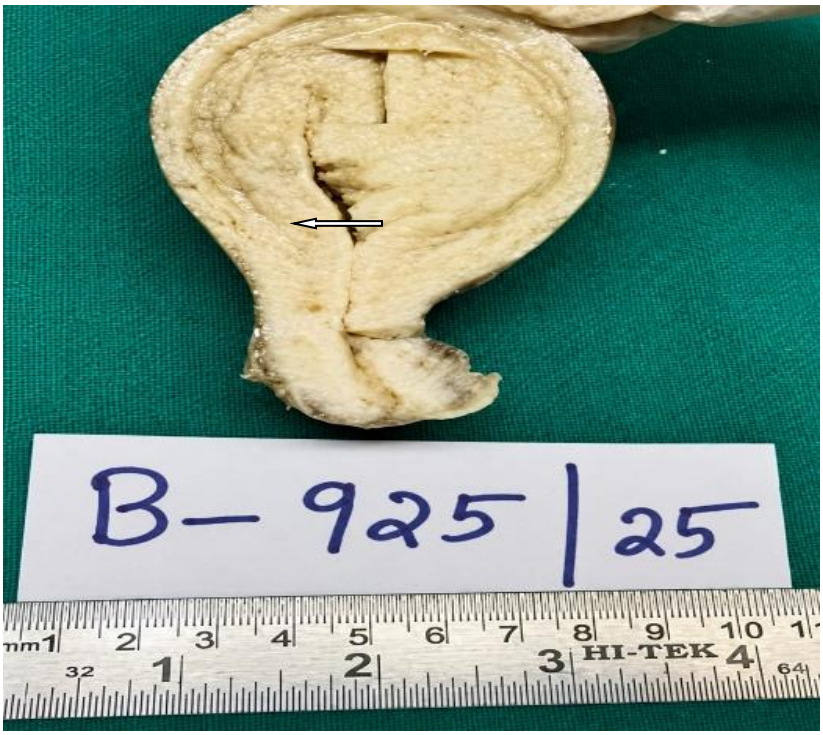

Fig 1: Cut section of the uterus showing blue-black area and Nabothian cyst.

MICROSCOPIC FINDINGS

Histological sections of the cervix shows focal polypoidal cervical tissue with focal surface erosion and Nabothian cyst(Fig 2a). Subepithelium shows acute and chronic inflammation and scattered brown pigment laden macrophages in stroma (Fig 2b) These pigment laden macrophages are negative for Prussian blue stain (Iron stain) (Fig 2d).

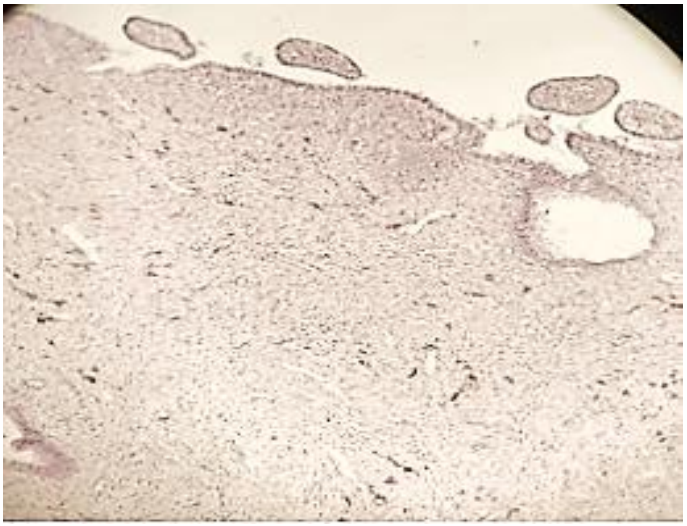

Fig 2a -low power view - H&E showing scattered brown pigment laden macrophages in stroma

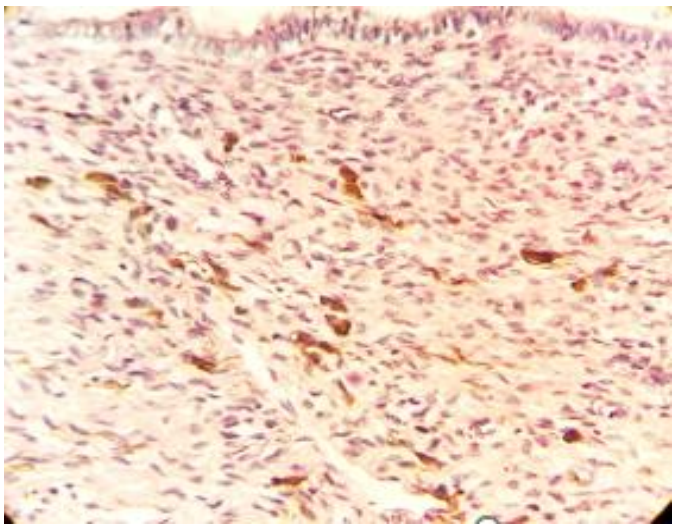

Fig 2b -high power view - H&E showing scattered brown pigment laden macrophages in stroma

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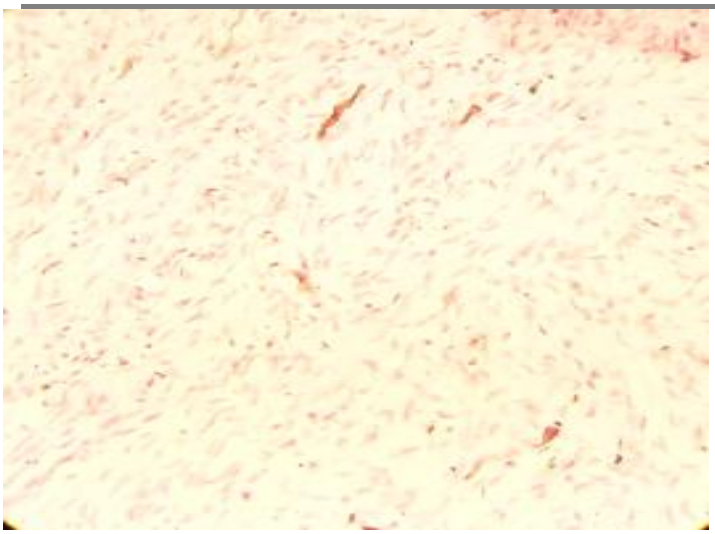

Fig 2c – low power view: Prussian blue stain showing pigment laden macrophages are negative

Although immunohistochemistry was not performed, blue nevi typically express S-100 protein and HMB-45, confirming melanocytic lineage[5].

DISCUSSION

Blue nevus is a benign melanocytic lesion most commonly encountered in the skin, particularly over the extremities and dorsal surfaces. Involvement of the uterine cervix is exceptionally uncommon, and only isolated case reports and small case series have been documented in the literature[2,6]. Most cervical blue nevi are identified incidentally during histopathological examination of hysterectomy specimens performed for unrelated gynecological conditions[5,8]. The lesion is usually asymptomatic and lacks characteristic clinical or radiological findings.

The exact histogenesis of cervical blue nevus remains uncertain. One proposed mechanism suggests aberrant migration of neural crest–derived melanocytes into the Müllerian tract during embryogenesis. Another theory supports melanocytic differentiation of cervical stromal cells through metaplastic transformation[8]. These explanations account for the presence of pigmented dendritic or spindle-shaped melanocytes within the cervical stroma.

Microscopically, cervical blue nevus is characterized by scattered spindle-shaped or dendritic melanocytes containing finely granular melanin pigment embedded within the cervical stroma[6]. The cells are cytologically bland, with inconspicuous nucleoli and absence of significant pleomorphism or mitotic activity. In most reported cases, the lesion remains localized without stromal destruction or infiltrative growth[10]. Immunohistochemical studies, when performed, typically demonstrate positivity for S100 and melanocytic markers such as HMB-45 or Melan-A, confirming melanocytic origin[10].

The principal diagnostic consideration is primary malignant melanoma of the cervix, an extremely rare but highly aggressive neoplasm. Distinction between these entities is essential because their clinical implications differ markedly. Unlike blue nevus, malignant melanoma exhibits marked nuclear atypia, increased mitotic activity, pleomorphism, necrosis, and invasive growth[9]. Careful histomorphological assessment therefore plays a crucial role in avoiding overdiagnosis and unnecessary aggressive treatment.

Previously published studies by Tieng and Tavassoli[1] described cervical melanocytic lesions as uncommon incidental findings with benign biological behavior. Similarly, Veras and Malpica[5] emphasized that most benign melanocytic lesions of the female genital tract are discovered incidentally and carry no adverse prognostic significance. Kaygusuz et al[6]. also highlighted the rarity of cervical blue nevus and stressed the importance of differentiating it from malignant melanoma on histopathological grounds.

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CONCLUSION

Blue nevus of the uterine cervix is a rare benign melanocytic lesion usually detected incidentally during microscopic examination. Although clinically insignificant, recognition of its characteristic histopathological features is important to exclude malignant melanoma of the cervix. Documentation of additional cases contributes to better understanding of its pathogenesis, morphology, and differential diagnosis, thereby improving awareness among pathologists and gynecologists.

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