

# Case Report

## Incidentally Detected Blue Nevus of Endocervix: a Case Report

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### Abstract

Blue nevi are uncommon, asymptomatic lesions of the uterine cervix. These lesions are not often detected clinically or on colposcopy. Careful histopathological examination is required. The nevus cells are said to originate from the immature melanoblasts of the neural crest. These lesions need to be differentiated from malignant melanoma and melanosis of the cervix. We present here a case report of incidentally detected cervical blue nevus in a 52 year old lady.

**Keywords:** Blue Nevi, Cervix

### Introduction

Blue nevi are benign melanocytic skin lesions and histologically represent diffuse proliferation of spindle shaped melanocytes. They are uncommon in the cervix (1,2). The other extracutaneous sites of occurrence include the vagina, spermatic cord, prostate, pulmonary hilus, orbit, oral mucosa, oesophagus, maxillary sinus and lymph nodes. These pigmented lesions are derived from immature melanoblasts migrating from the neural crest to

the mullerian tract during embryonic life(1,3,4). The first two cases of pigmented cervical lesions were observed in 1883 and were reported by Bland-sutton (5) in 1922, who described them in women with uterine prolapse(5,6). Being rare lesions, the actual incidence has been difficult to determine. Uehara et al.(7) estimated an over-all incidence of upto 28.6% in their case series, while Patel et al. (8) had earlier noted the incidence of blue nevi to be 0.12–1.9%. Some authors have also noted the existence of racial differences in

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Received: 16 May 2014

Accepted: 11 July 2014

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the prevalence of this entity.

Clinically, patients with blue nevi of the endocervix are asymptomatic. These lesions are usually incidental findings detected histologically on surgical or biopsy specimens obtained for other purposes such as dysfunctional uterine bleeding, leiomyoma or prolapse (1,2,9,10).

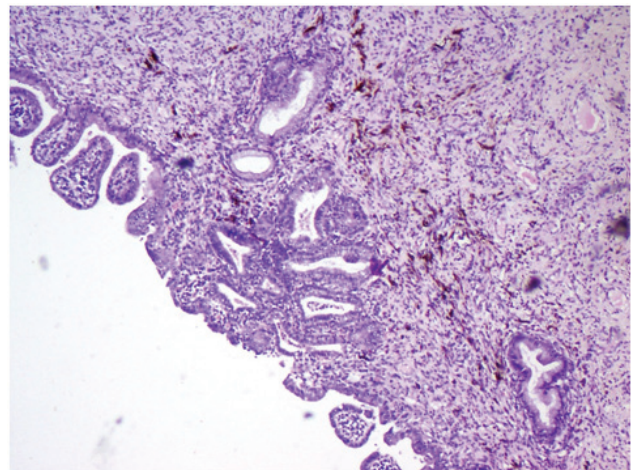
Here in, we present a case report of endocervical blue nevus in a 52-year-old woman.

### Case Report

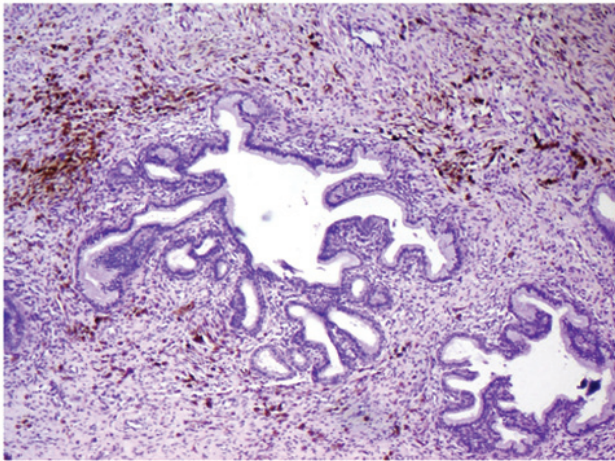
A 52-year-old woman (gravida II, para II) presented with pain abdomen and irregular menstrual cycles since the past 6 months. On evaluation, she was detected to have uterine fibroids on ultrasonography. Hysterectomy was performed and the specimen was sent for histopathological examination. Gross examination revealed an enlarged uterus, with bosselated surface. On cut section, multiple intramural fibroids with whorled areas and areas of hemorrhage were identified. The endocervix showed a small blue-black area measuring 0.5×0.5 cm (Fig. 1). On microscopic examination, loose clusters of pigment-laden cells were observed in the sub-epithelial stroma of the endocervix. The cells had round to oval nuclei, inconspicuous nucleoli with no atypical features (Fig. 2, 3). The cytoplasm was filled with multiple small brownish granules. These cells stained positive with Masson Fontana (Fig. 4), negative with Perl's Prussian blue and when bleached with hydrogen peroxide. The overlying epithelium showed neither melanocytes nor melanin pigment accumulation. Sections from the fibroid showed interlacing bundles of smooth muscle fibers with vesicular nucleus. No mitotic figures, atypical features or necrosis were noted. Based on the following observations a diagnosis of leiomyoma with blue nevus of the endocervix was rendered.



**Fig. 1:** Cut section of the uterus shows endocervix showed a small blue-black area (marked with arrows)



**Fig. 2:** Clusters of melanin pigment-laden cells arranged in clusters overlying the endocervical epithelium. (H&E ×40)



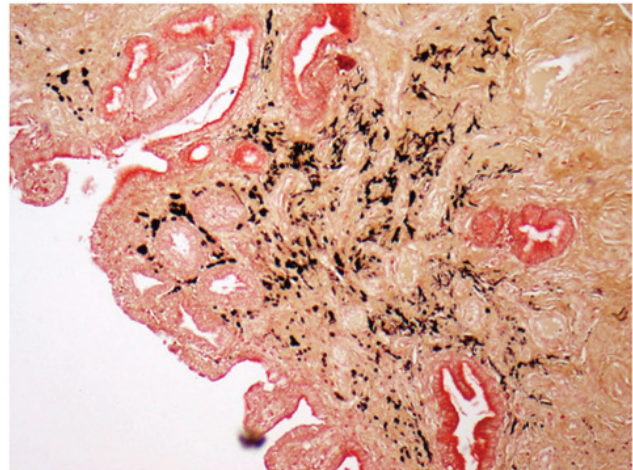
**Fig. 3:** Similar cell clusters surrounding the endocervical glands. (H &E ×40)

### Discussion

Melanocytic lesions are uncommon lesions of the cervix because the cervical mucosa is devoid of melanocytes(1, 2). The various pigmented lesions other than blue nevus include malignant melanoma and melanosis of the cervix, which can be included in the differential diagnosis of a cervical blue nevus. When compared to the blue nevus, melanosis of the cervix shows the presence of melanin pigment in the basal epithelium only, and not in the stroma. However, melanoma is characterized by junctional activity and clusters of malignant cells invading the stroma with atypical nuclear features(4, 10). In the present case, melanin pigment was not observed in the basal epithelium.

There are various theories as postulated by Craddock et al and Sun et al. regarding the origin of pigmented melanocytes in the cervix. These include 1. Migration of neural crest elements during embryonic life; 2. Melanocytes could migrate from adjacent mucocutaneous areas; 3. Squamous metaplasia or epidermidisation of the cervical epithelium due to prolapse or chronic irritation(2,11,12).

A lot of controversy regarding the origin of cells in a blue cell nevus exists. Sun et al.(12) have regarded that blue nevus cells are not of purely melanocytic or Schwannian origin,



**Fig. 4:** Cells show positivity for melanin. (Masson Fontana, ×40)

but are derived from a precursor cell that has some common features of both melanocyte and Schwann cell. Saikia et al. also describe these cells to show both melanocytic and schwannian differentiation(13).

Various authors have described these lesions to present as <0.5cm small and solitary blue-black macules in the endocervix(1, 6, 9-11). Similarly, the present case also showed blue-black lesion measuring about 0.5cm × 0.5 cm in the endocervical region. On light microscopy, blue nevi are composed of wavy elongated dendritic cells arranged in clusters or individually, below endocervical epithelium(6-8). Their cytoplasm contains brown melanin pigment, which may also be seen in stromal macrophages. Therefore, these lesions have also been referred to by some authors as stromal melanocytic foci (SMF) (1,5,11). Similar loose clusters of cells were observed in the present case which stained positive with Masson's Fontana stain. On immunohistochemistry the melanocytes show positivity for HMB45, S-100 and melan A. The differential diagnosis has been shown in Table 1. Blue nevi have also been found in association with malignant melanoma of the uterine cervix, endometrioid adenocarcinoma and vulvar malignant melanoma(14-16). However the exact clinical significance of these associations is not known.

All pigmented lesions of the cervix should be carefully followed up if detected on endocervical curettage, cervical biopsy, or cervical cone biopsy specimens. Detecting these lesions on hysterectomy specimens could be challenging.

It requires meticulous examination as they can be easily unnoticed on gross examination owing to their minute size. The diagnosis should be made carefully taking into consideration all the differential diagnosis.

**Table 1:** Differential diagnosis of blue nevi in the cervix

Differential Diagnosis	Features on Histopathology
<b>Blue Nevi</b>	Clusters singly scattered, spindle to elongated cells with melanin pigment seen in the subepithelial stroma. Neither melanocytes nor melanin pigment accumulation in the overlying epithelium.
<b>Melanosis of Cervix</b>	Hyperkeratosis, acanthosis of overlying epithelium with abundant basilar pigmentation. Melanin pigment is present in the basal epithelium only. No stromal melanocytes are seen. No atypical features
<b>Melanoma of Cervix</b>	Presence of melanin pigment in the normal cervical epithelium Junctional activity is seen with infiltrating clusters of malignant cells Stromal invasion and atypical nuclear features are seen Cells display variable degree of pleomorphism, show prominent eosinophilic nucleoli and melanin pigment.

### Acknowledgement

We wish to thank all the technical staff of the Department of Pathology.

### Conflict of interest

The authors declare that there is no conflict of interests.

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