

Quiz

CORRECT ANSWER TO THE QUIZ. CHECK YOUR DIAGNOSIS

BLUE NEVUS PRESENTING AS AN ENDOCERVICAL POLYP

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We report herein a case of blue nevus of the uterine cervix presenting as an endocervical polyp. A 58-year-old Japanese female was presented with an endocervical polyp. The polyp was promptly excised, and histological examination revealed distribution of many melanin-loaded spindle-shaped cells in its stromal portion. Immunohistochemically, the cells were positive for S100 protein, SOX10, HMB45, and MART-1. Based on the characteristic cellular morphology and immunohistochemical findings, the lesion was diagnosed as a blue nevus, and malignant melanoma was denied. Endocervical blue nevi are relatively rare, and there are some discordance among previous publications about immunoreactivity against HMB45 and MART-1.

Key words: benign melanocytic tumor, blue nevus, uterine cervix, immunohistochemistry.

Introduction

Blue nevi of the uterine cervix are benign melanocytic neoplasms, which were once considered to be rare and were usually found incidentally in hysterectomy specimens [1, 2, 3, 4, 5, 6, 7, 8].

We report herein a case of blue nevus of the uterine cervix presenting as an endocervical polyp. Histological findings were completely the same as previously reported, but immunohistochemical findings were in partial disagreement with those described in some previous publications [8, 9, 10]. We discuss possible reasons for this discordance.

Case report

A 58-year-old Japanese female who complained of body weight loss (−4.7 kg/year) was referred to our hospital. The patient had no medical history of

abnormal genital tract bleeding but a gynecological examination was performed as a part of a systemic examination. In addition to multiple uterine myomas (up to 4 cm in diameter) detected by transvaginal ultrasonography, a small endocervical polyp (5 mm in length) was found and excised promptly. Although the macroscopic observation by the gynecologist revealed no remarkable findings, examination of the histological specimen showed many pigmented spindle-shaped cells distributed in the stromal portion of the polyp (Fig. 1). Histochemical special stains verified that the intracellular pigments were melanin granules (Fig. 2). Immunohistochemical analyses using red chromogen (Bond Polymer Refine Red Detection, Leica Biosystems, Nussloch, Germany) further revealed that the cells were positive for S100 protein, SOX10, HMB45, and MART-1 (Fig. 3). Based on the characteristic cellular morphology and immunohistochemical findings, the lesion was diagnosed as

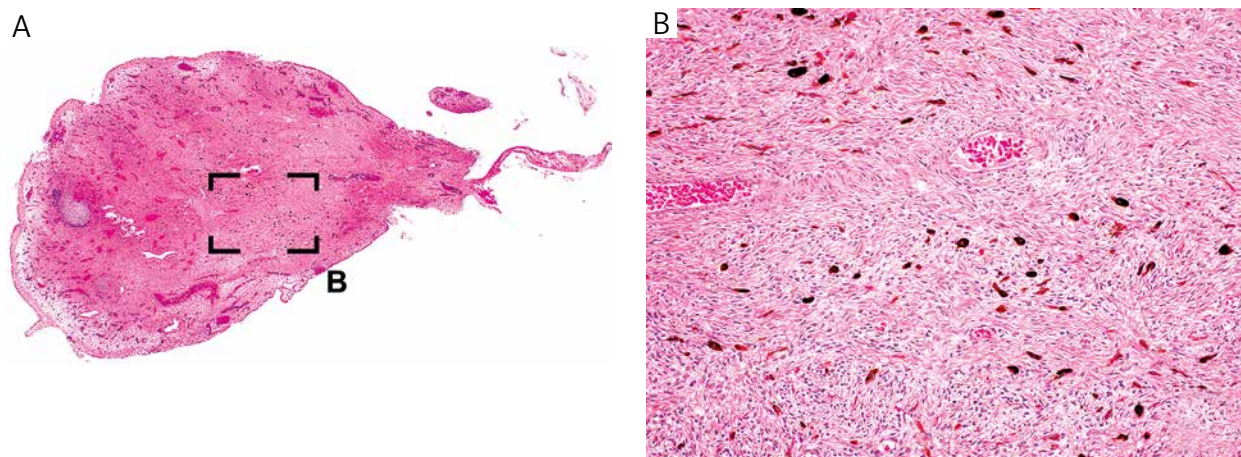


Fig. 1. Histological findings of endocervical polyp. A) Low-magnification view. Center rectangle encloses the portion shown in B (HE stain; original magnification 10×). B) High-magnification view. There are many spindle-shaped cells containing dark brown pigments. (HE; original magnification 100×)

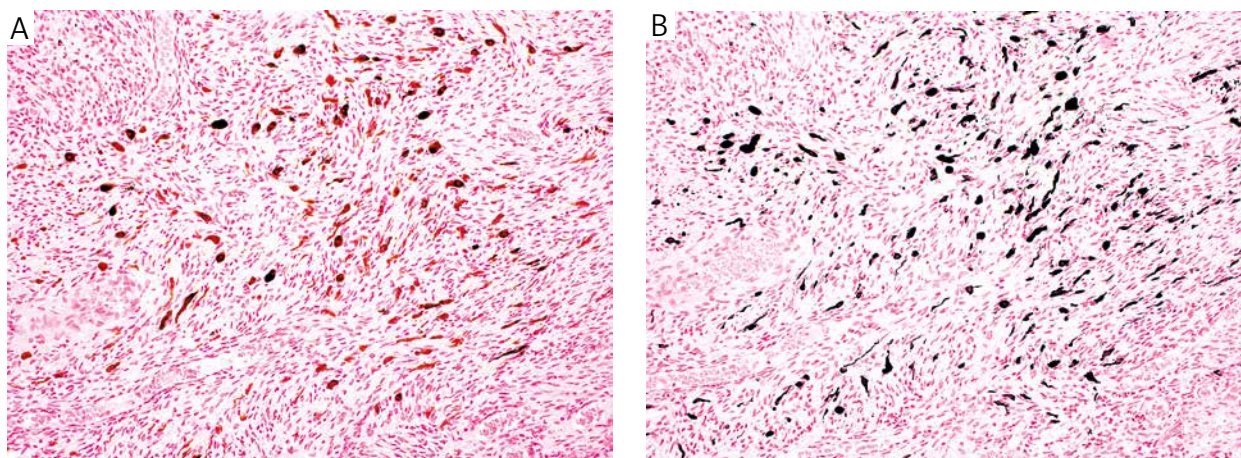


Fig. 2. Histochemical findings. A) Prussian blue stain for iron. Brown pigment is negative (original magnification 100×). B) Fontana-Masson stain for melanin. Black color reaction indicates the presence of melanin granules (original magnification 100×)

being a blue nevus, and malignant melanoma was denied. Despite detailed medical examinations, the cause of the body weight loss was not identified.

Discussion

Although reports of endocervical blue nevi have been few, recent comprehensive pathologic studies revealed that this type of melanocytic disease was not so rare, especially in Japan [11, 12]. Their biological nature is completely benign corresponding to cutaneous tumors [10, 13]. The origin of melanin-loaded tumor cells has been suggested to differ from that of cutaneous tumors [8, 11, 12]. However, the present immunohistochemical results, S100 protein (+), SOX10 (+), HMB45 (+), and MART-1 (+), indicated that tumor cells of our case possessed representative melanocytic characters [14].

Their distinctive morphology, spindle-shape or dendritic contours and dark brown cytoplasmic pig-

ments serve as reliable diagnostic hallmarks [10, 13]. A careful differential diagnosis is necessary to distinguish blue nevi from their malignant counterpart, desmoplastic melanoma, which can develop as a primary uterine cervical tumor [15]. Immunohistochemically, whereas blue nevi are positive for most of the representative melanocytic markers including S100 protein, HMB45 and MART-1, desmoplastic melanomas are negative for the latter two markers [13].

We could diagnose the present lesion as a benign blue nevus through prudent interpretation of the histological, histochemical and immunohistochemical findings, which were in agreement with descriptions in a dermatopathology textbook and most previous pathologic case reports. Concerning immunohistochemical features, the tumor cells were described as being positive for S100 protein, HMB45 and MART-1 [2, 3, 4, 5, 6, 7, 13]. Surprisingly, however, the immunohistochemical features described in latest edi-

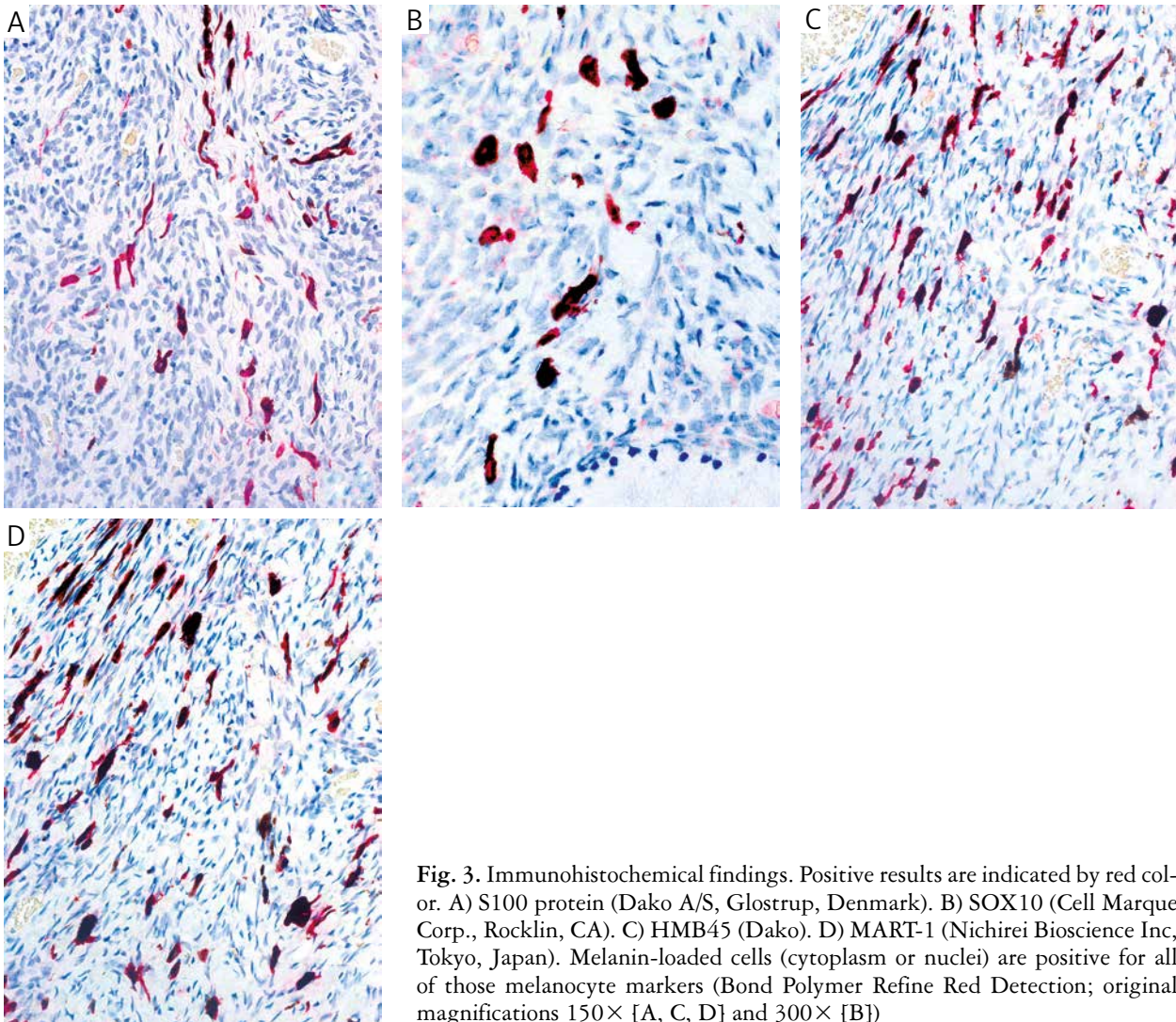


Fig. 3. Immunohistochemical findings. Positive results are indicated by red color. A) S100 protein (Dako A/S, Glostrup, Denmark). B) SOX10 (Cell Marque Corp., Rocklin, CA). C) HMB45 (Dako). D) MART-1 (Nichirei Bioscience Inc, Tokyo, Japan). Melanin-loaded cells (cytoplasm or nuclei) are positive for all of those melanocyte markers (Bond Polymer Refine Red Detection; original magnifications 150× [A, C, D] and 300× [B])

tion of a gynecopathology textbook were different from our findings and previous reports; that is, this textbook stated that endocervical blue nevi are usually negative for HMB45 and MART-1 [10]. Certainly, two reports described that endocervical blue nevi were negative for HMB45 [8, 9], but no report has stated MART-1 negative. We could not find the reason why the textbook explained that MART-1 was usually negative.

As for the discordance in the HMB45-immunostaining results, we considered two possibilities. One is the existence of tumor subtypes. HMB45 is a melanosome-related antigen. While premature melanosomes are intensely stained with the antibody, late-stage melanosomes are hardly stained [16]. As above, the cellular origin of endocervical blue nevi has been suggested to be different from cutaneous tumors [8, 11, 12], and there may be tumor subtypes depending on cellular maturation.

The other possibility is derived from differences in the immunohistochemical techniques used. Standard brown chromogen potentially induces misinterpretation

of findings on melanin-loaded cells. A pre-stain bleach technique seems to provide a reasonable resolution, but may weaken immune reactivity [7]. An alternative red chromogen has a great advantage when the immunohistochemical staining targets melanin-loaded cells [17].

In conclusion, we experienced a case of blue nevus of the uterine cervix presenting as an endocervical polyp. Detailed histological and immunohistochemical examinations led to the correct pathologic diagnosis. Endocervical blue nevi, as well as cutaneous tumors, are usually positive for S100 protein, SOX10, HMB45 and MART-1 immunohistochemically.

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The authors declare no conflict of interest.

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