

Gliosis of the cervix

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ABSTRACT

Cervical glial polyps or gliosis of uterine cervix are rare. These are rare polypoidal mesenchymal tumours and usually manifest with vaginal bleeding, post-coital bleeding or cervical discharge. Microscopically these polyps show heterotopic glial tissue with varying degree of gliosis. Immunoperoxidase staining with Glial fibrillary acidic protein (GFAP) confirms the glial nature of the polyp. Controversies remain regarding the origin. Some consider them to be foetal implants following termination of pregnancy whilst others consider them to be metaplastic in nature. We report a rare case of cervical gliosis that was diagnosed after histological examination of the resected specimen in a 32-year-old lady who presented with irregular per vagina bleeding.

Keywords: Cervical polyp, gliosis, glial fibrillary acidic protein, inter-menstrual bleeding

INTRODUCTION

Cervical glial polyps or gliosis of uterine cervix are rare. Most of these are reported as single case reports with rare series of less than five cases.¹⁻⁵ Most cervical polyps are asymptomatic but can manifest as vaginal bleeding, post-coital bleeding or cervical discharge. The most common polypoidal lesion found in the uterine cervix is the simple endocervical polyp. Mesenchymal tumours of uterine cervix constitute one percent of all cervical tumours and leiomyomas are the most common. Haemangiomas, lymphomas, neuromas and nerve sheath tumours and neuroectodermal tumours have also been described. Gliomas

or glial polyps are rare.⁶ We report a rare case of cervical gliosis that was diagnosed after histological examination of the resected specimen in a 32-year-old lady who presented with irregular inter-menstrual bleeding.

CASE REPORT

A 32-year-old female army officer presented to the Department of Gynaecology with a four month history of irregular intra-menstrual bleeding. She was married with five children, eldest was eight years and the youngest was two years old. Her last menstrual period was four days prior to admission. There was no history of abortion. She gave history of anti-tubercular treatment for one year following a diagnosis of spinal tuberculosis eight years previously. There was no other significant past medical history or family history.

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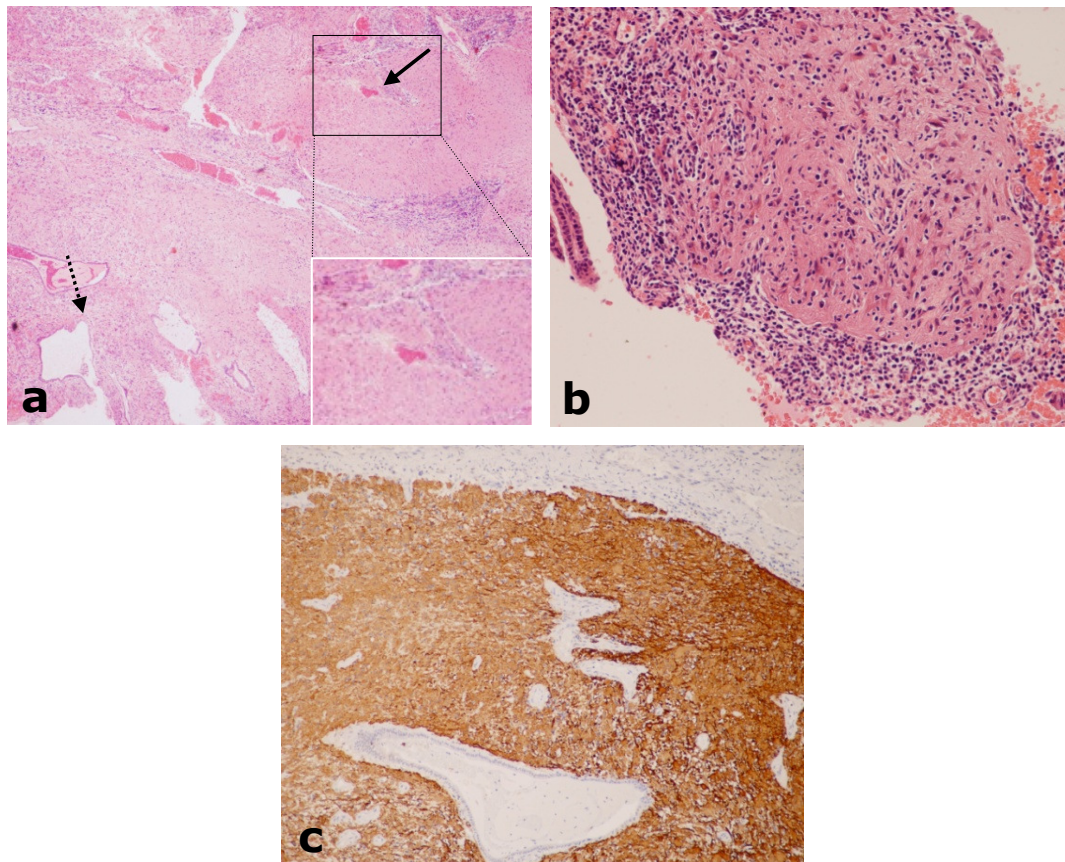


Fig. 1: a) Endocervical glial polyp-glia tissue (arrow) and endocervical glands (broken arrow) (H&E, 10x), insert showing magnified portion, b) Endometrial curettage- glia tissue in endocervical fragment (H&E, 20x) and c) Immunoperoxidase GFAP stain- brown staining depicts glial tissue (GFAP, 20x).

Admission blood investigations were normal. Per vagina examination was normal apart from a cervical polyp. She underwent an uncomplicated cervical polypectomy and endometrial curettage. Her post-surgical stay was uneventful and she was discharged from the hospital second day after the surgery.

Two specimens were sent for analysis; a cervical polyp measuring 1 x 0.5 cm which was a smooth-surfaced pale pink to red coloured soft mass and a second specimen labelled as endometrial curettings which contained average haemorrhagic soft tissue fragments. On microscopic examination, the polyp was covered by an endocervical mucosa with focal ulcerations. The core was com-

posed of sheets and islands of spindle shaped cells with granular pink cytoplasm and uniform nuclei. The stroma also showed a large number of blood vessels but no endocervical glands (Figure 1). Immunohistochemistry staining showed the spindle shaped cells to be strongly positive for glial fibrillary acidic protein (GFAP) (Figure 2). This confirmed the glial nature of the specimen. Staining for Smooth muscle actin (SMA) and muscle specific actin (MSA) were negative and this excluded the possibility of a leiomyoma. The endometrial fragments showed evidence of menstrual phase endometrium. In addition, two fragments lined by endocervical mucosa also showed spindle shaped cells similar to the cervical biopsy and stained positively with

GFAP. The findings were consistent with a diagnosis of cervical gliosis presenting as an endocervical polyp.

The patient remained under follow up for any further bleeding per vagina.

DISCUSSION

Glial polyps are rare mesenchymal tumours and usually manifest as endocervical polyp. They can present as a polyp on ectocervix or as a cervical mass.³ Microscopically these polyps show heterotopic glial tissue with varying degree of gliosis. Immunoperoxidase staining with glial fibrillary acidic protein (GFAP) confirms the glial nature of the polyp.⁴

Clinical manifestations of glial polyps include irregular vaginal bleeding, post-coital bleeding or cervical discharge. However, they can also be asymptomatic and discovered incidentally. Often the diagnosis is only made after histological examination of biopsy or resected specimen.

Controversies remain regarding the origin of glial polyps. Some consider them to be foetal in origin while others consider them to be metaplastic in nature.^{3, 4, 5, 7} There are two theories proposed regarding the origin cervical gliosis. As most of the case reports were associated with history of termination of pregnancy, glial tissue was believed to be from foetal implants.^{2, 3, 5} However in some reports, foetal implantation was considered unlikely and metaplastic transformation as a cause of glial tissue was postulated. The endometrium and cervix develop from the Mullerian tissue and hence metaplasia transformation of the pluripotent Mullerian tissue was

postulated. Ferguson *et al.* studied the genetic makeup of glial tissue in patients with ovarian teratomas who also have peritoneal gliosis. They found that ovarian teratomas contained a duplicated set of maternal chromosomes and are thus homozygous at polymorphic microsatellite (MS) loci. In contrast, DNA from matched normal or the metaplastic tissue, peritoneal gliosis was found to be heterozygous, containing maternal and paternal genetic material. Their findings indicated that glial implants in peritoneal gliosis were heterozygous and arose from cells within the peritoneum, presumably pluri-potent Mullerian stem cells, and not from the associated ovarian teratoma. This theory also supports the origin of endometriosis, non-invasive implants of papillary serous tumours, smooth muscle foci in disseminated peritoneal leiomyomatosis and peritoneal glial implants.⁷

Our patient had five previous successful pregnancies, without any history of documented termination and had not used any contraception. However, although unlikely, it is possible that the irregular bleeding that she had experienced may be due to an unnoticed pregnancy and miscarriage. Her endometrial curettage did not show any features of abortion. We also keep the possibility of the metaplastic theory. Further studies are required to study the exact origin of this rare and interesting condition.

In conclusion, we report a rare case of cervical gliosis presenting as irregular intra-menstrual bleeding. The diagnosis was only made after histological examination of the cervical polyp. The exact origin of this condition remains unknown.

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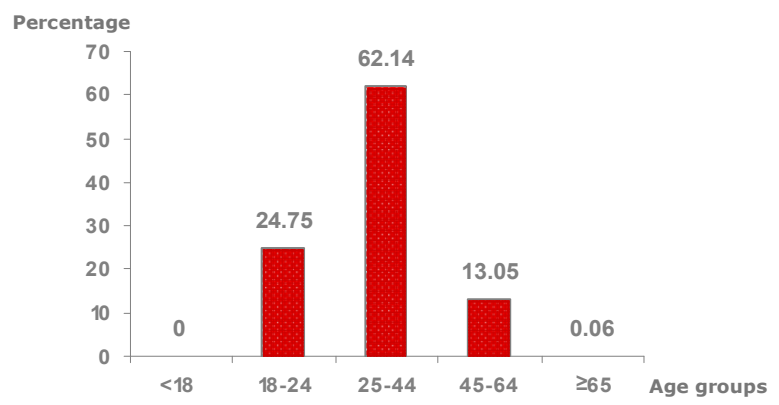
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Blood donations worldwide	Donors aged under 25 years	Female donors
92 million annually by all types of blood	45% of all donations collected in low- and middle income countries	40% or more of the blood supply in 25 countries

In Brunei Darussalam

**83.3% are male
&
16.7% are female**



Age distribution of blood donors in Brunei Darussalam