



OBJECTIVE

A rare case of Anaplastic variant of Embryonal Rhabdomyosarcoma in a 12-year-old girl

CASE REPORT

12-year-old adolescent girl presented to A&E in August 2024 with:

- Continuous vaginal bleeding
- Mass protruding at the vaginal introitus

History of:

- Menarche 2 years prior
- Regular menstrual cycles
- Otherwise, healthy with no significant comorbidities

Clinical findings:

- Grape-like polypoidal growth observed at the vaginal introitus
- Initial clinical suspicion: Sarcoma botryoides

Hospital course:

- Admitted for further evaluation
- Underwent examination under anaesthesia
- Excision of two large polyps (approx. 6 cm and 4 cm) from a common stalk arising from the left posterolateral cervix

Histopathology findings:

- Confirmed Anaplastic variant of Embryonal Rhabdomyosarcoma (ERMS)

DISCUSSION

Rhabdomyosarcomas (RMS) are primitive mesenchymal tumors that mimic skeletal muscle development (myogenesis). RMS is the most common paediatric soft tissue sarcoma and among the top 10 childhood cancers.

Most commonly arise in the head and neck or genitourinary tract.

RMS subtypes include:

- Embryonal (most common)
- Alveolar
- Undifferentiated (*Parham and Barr, 2013*)

About 20% of RMS cases in children involve the genitourinary tract.

- Only 0.5% of paediatric RMS arise from the cervix (*Arndt et al., 2001*)

Diagnosis is based on:

- Histopathology showing Rhabdomyoblasts in a myxoid stroma
- Immunohistochemistry positive for:
 - Vimentin
 - Desmin
 - Actin (*Mousavi and Akhavan, 2010*)

Treatment plan for this patient included:

- Referral to Clinical Genetics
- Baseline cervical exam and biopsies
- Egg-harvesting for fertility preservation
- Fertility-sparing surgery
- Chemotherapy



CONCLUSION

Cervical RMS should be considered as a differential diagnosis for continuous vaginal bleeding in adolescent girls and should be investigated thoroughly. Given the young age at diagnosis, psychological support, fertility sparing surgery and maintaining the oncological safety is of paramount importance.

References

- Arndt, C.A., Donaldson, S.S, Anderson, J.R., Andrassy, R.J., Laurie, F., Link, M.P., et al.,2001. What constitutes optimal therapy for patients with rhabdomyosarcoma of the female genital tract? *Cancer* 91, 2454-2468.
- Mousavi and S. Akhavan, "Sarcoma botryoids' (embryonal rhabdomysarcoma) of the uterine cervix in sisters," *Journal of Gynecologic Oncology*, vol. 21, no. 4, pp. 273-275, 2010
- Parham,D.M., Barr, F.G., 2013. Classification of rhabdomyosarcoma and its molecular basis. *Adv. Anat.Pathol.* 20, 387-397