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POSTER PRESENTATION Open Access

MRI in intracavitary brachytherapy planning for cervical cancer malignancy, the pitfalls and complications

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Learning objectives

- Discuss the role and benefits of MRI in planning for brachytherapy treatment in cervical cancer.
- Discuss the key mechanisms of the applicator and the technical aspects of planning brachytherapy.
- Discuss the role of MRI imaging in recognising the features of appropriate applicator placement and common complications.
- Review key MRI features of radiation-related alterations in the pelvis post treatment and tumour response assessment.

Contents

- Anatomy of the female pelvic organs on MRI
- Key MRI imaging features of cervical cancer on MRI
- Review the staging of cervical cancer amenable to brachytherapy (FIGO)
- Advantages of brachytherapy versus external beam radiotherapy in treating cervical cancer.
- Technical aspects of applicator selection and positioning in brachytherapy.
- MRI features in assessment of appropriate placement of brachytherapy device, recognition of "organs at risk".
- Benefits of MRI versus more traditional imaging techniques CT and Radiographs, in brachytherapy planning.
- "Red flag" features of brachytherapy device misplacement in MRI.
- Features of tumour response and target organ assessment.
- Complications of brachytherapy including post radiation fibrosis.

Conclusion

- Analysis of MRI findings at the time of brachytherapy with the applicator is essential in the assessment of gross tumour volume, clinical target volumes and patho-anatomical structures.
- T2-weighted MR images minimise potential misinterpretation due to partial volume effects, which improves depiction of tumour in parametria, vaginal fornices, and cervix.

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