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Abstract
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Rate of Perioperative Complications requiring Emergency Room Visits for Patients Undergoing Hybrid Intercavitary/Interstitial High Dose Rate Brachytherapy in a Freestanding Outpatient Clinic: A Single Institutional Experience

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Abstract

Purpose: Hybrid intercavitary/interstitial high dose rate (HDR) brachytherapy allows for improved dose coverage of the target volume as well as lower doses to organs at risk (compared to intercavitary only brachytherapy) when used as part of the treatment for gynecologic malignancies. However, there is an increased possibility of complications given the invasive nature of interstitial needle insertion, especially when procedures are performed in an outpatient setting. The purpose of this study was to quantify the rate of complications requiring emergency room (ER) evaluation for patients undergoing hybrid intercavitary/interstitial HDR brachytherapy in a freestanding outpatient clinic.

Methodology: A retrospective chart review was conducted on gynecologic cancer patients undergoing hybrid intercavitary/interstitial HDR brachytherapy in the outpatient setting from 7/2020-3/2025 at our institution. The number of ER transfers for these patients on the days of their brachytherapy procedures was collected. Reasons for ER visitation were collected and classified.

Results: In total, 96 patients met criteria for analysis. These patients underwent a total of 374 insertions in the outpatient setting; each patient underwent a median of 4 (range 1-4) insertions. Out of 374 procedures, there were 7 transfers to the ER representing 1.87% of cases; 3 were due to bleeding, 1 was due to infection, 2 were due to a combination of bleeding and infection, and 1 was due to pain.

Conclusion: For gynecologic cancer patients undergoing hybrid intercavitary/interstitial HDR brachytherapy in a freestanding outpatient clinic, perioperative complications requiring ER transfers are rare. Outpatient clinics performing gynecologic cancer HDR brachytherapy should consider incorporating hybrid intercavitary/interstitial applicators into their workflows given the low rate of acute complications and the improvement in dosimetric parameters (compared to intercavitary only brachytherapy).