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Rectal washout with cytotoxic solution can be extended to the whole colon

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Abstract

Background: Rectal irrigation with a cytotoxic agent does not kill viable intraluminal cancer cells proximal to the primary tumour. To prevent implantation of these cells at the time of restorative proctectomy, the feasibility of retrograde whole-colon irrigation just before surgery was explored.

Methods: The cytotoxic efficacy of different combinations of povidone-iodine (PVPI) and Gastrografin was tested with the trypan blue exclusion test on a human colon carcinoma cell line (SW620) *in vitro*. Subsequently, a retrograde whole-colon lavage with PVPI 5 per cent and Gastrografin 12 per cent was performed in 14 euthyroid, non-allergic patients with colorectal cancer using a colostomy irrigation set. Thyroid function and mucosal damage were assessed.

Results: It took 2 min and approximately 1 litre of infused solution to reach the caecum in all patients. The solution was 100 per cent tumoricidal *in vitro* and remained so after colonic irrigation. Total serum tri-iodothyronine (T3) levels decreased and those of reverse T3 increased, but normalized after 1 week. Superficial epithelial desquamation was observed shortly after irrigation; however, complete restoration occurred within 7 days.

Conclusion: A rectal washout can easily be extended to a retrograde irrigation of the whole colon in elective colorectal cancer surgery. This may help to prevent anastomotic and local recurrence due to implantation of viable exfoliated tumour cells.

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