

Mitomycin gel: A novel alternative in the treatment of low-grade upper tract urothelial carcinoma

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Objective

To describe the successful prevention of nephroureterectomy in a patient with a upper tract urothelial carcinoma (UTUC) through the use of mitomycin in gel formulation.

Case Information

JT is a 56-year-old female with a background of lynch disease and endometrial cancer resulting in a total abdominal hysterectomy (TAH) and bilateral salpingo-oophorectomy (BSO). The patient had also been previously diagnosed with urothelial carcinoma resulting in a left nephroureterectomy. A routine scan of the right kidney revealed an anomaly in the upper urothelial tract which was confirmed to be a low grade papillary urothelial carcinoma through a cystoscopy and biopsy. JT opted for endoscopic management and bladder instillation instead of another nephroureterectomy despite risk of seeding and reoccurrence.

Literature Review

Mitomycin C is used in treatment of urothelial carcinomas of the bladder, however limited studies on its use in UTUC exists.¹ Radical nephroureterectomy is recommended in high grade urothelial carcinomas whereas for low grade carcinomas, laser ablation followed by intracavitary chemotherapy is preferred.² Efficacy of intracavity drug instillation into the upper tract is undetermined as disease recurrence rates are comparable to the untreated. An open-label, single arm clinical trial demonstrated favorable results with the use of mitomycin-containing reverse thermal hydrogel in low grade UTUC³.

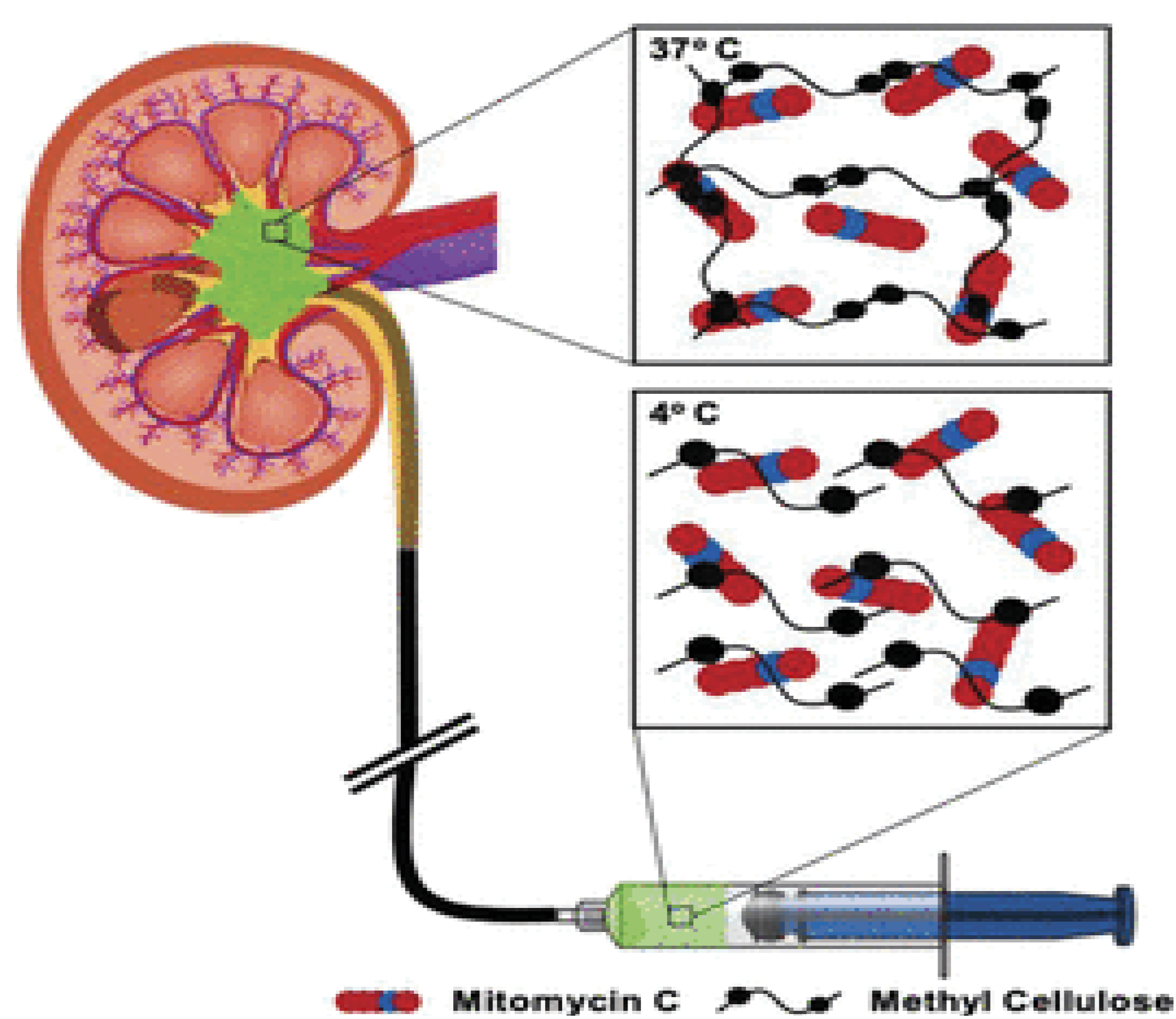


Fig.1 Mitomycin gel phase transition

Case Progress

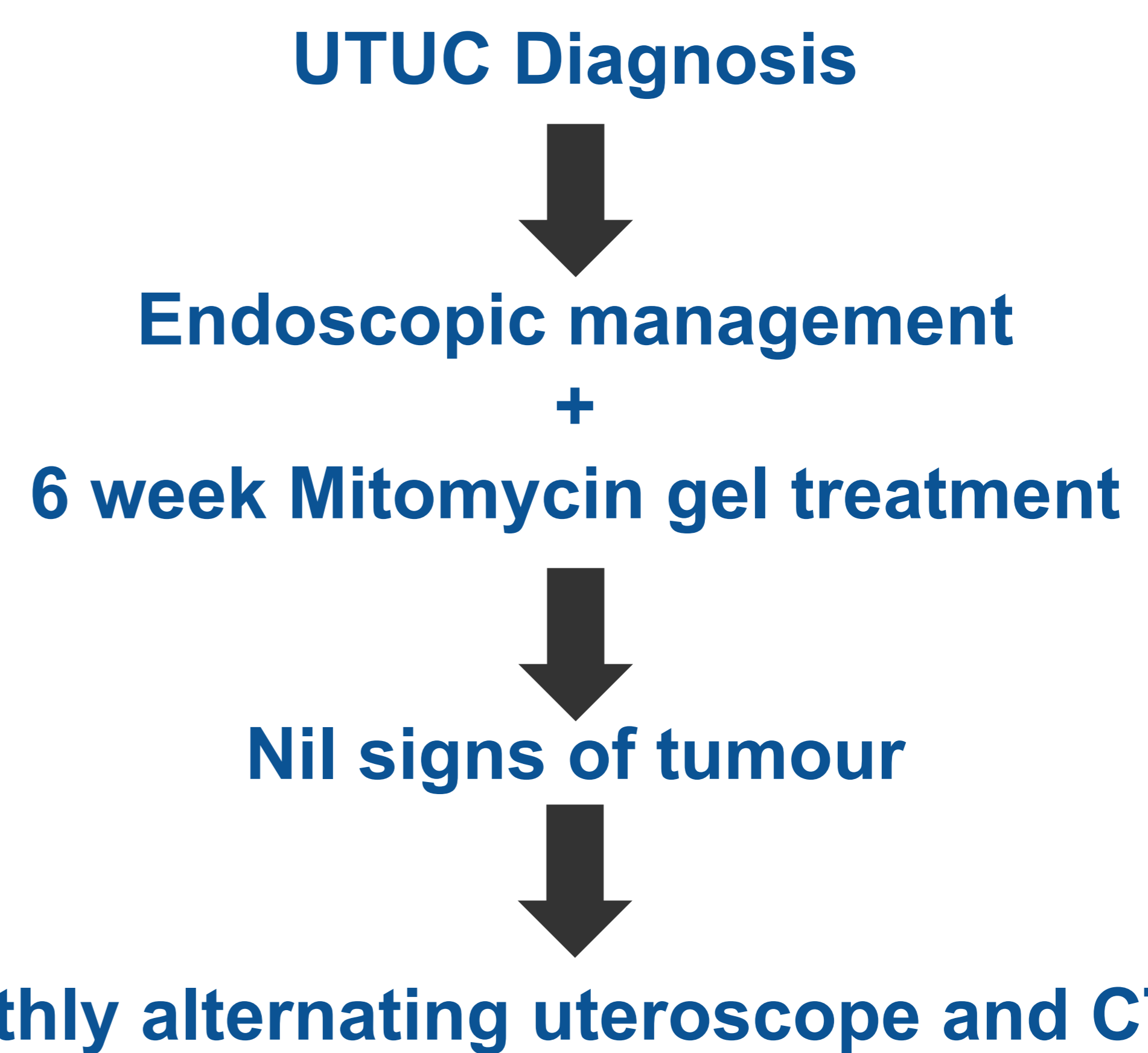
The day oncology pharmacy team were consulted to advise on the feasibility and stability of mitomycin gel production. The pharmacy team procured the product through the Special Access Scheme and manufactured the gel formulation aseptically under strict temperature control involving a specialised chilling block. This allowed the patient to receive six treatment cycles of weekly mitomycin gel instillation via nephrostomy.



Fig.2 Chilling block used to keep product temperature low

Outcomes

Treatment appeared to be well tolerated and the patient had only reported minor back pain and nausea during her treatment course. A review six months later showed no signs of tumor within the bladder or urothelial tract.



Discussion

Radical nephroureterectomy remains one of the mainstay treatments for UTUC. This case highlights the effective use of Mitomycin-containing reverse thermal gel as a kidney sparing alternative treatment of low grade UTUC. Oncology pharmacists are expertly positioned to provide advice on the stability and efficacy of chemotherapeutic agents.

References

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