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LETTER TO THE EDITOR

Fluoroscopic Guided Transluminal Biopsy of the Oesophagus and Ureter with a Biliary Biopsy Forceps Kit

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To the Editor,

Biliary biopsy forceps (BBF) (Cook Medial, USA) have now been introduced and shown to be very effective in obtaining positive histology in malignant biliary strictures [1, 2]. The set consists of 7 French sheath and forceps which are advanced alongside an 0.035 wire. Unlike other biopsy kits, the BBF set allows you to biopsy the stricture through the sheath leaving an 0.035 wire maintaining access across the lesion. This is also advantageous where distal wire position is then required for subsequent procedures. Despite their documented success, there are no reports of the forceps being used to obtain samples from extrabiliary territories and there is very little literature on other forceps sets being used outside of their intended use [3].

We describe three clinical cases where the same technique and equipment were utilised in patients with suspected malignant oesophageal and urothelial strictures to obtain diagnostic tissue biopsies following failed conventional methods. To our knowledge, these are the first reported cases where BBF have been used outside of the hepatobiliary system.

In the first two cases, two elderly patients with a previous history of oropharyngeal malignancy, both previously treated with chemo-radiotherapy, re-presented with dysphagia. Conventional endoscopic biopsy was not possible in both cases due to an impassable hypopharynx following previous radiotherapy. In both cases, upper GI swallow studies and cross-sectional imaging demonstrated cervical oesophageal strictures due to tumour recurrence.

The patients required a radiologically inserted gastrostomy (RIG) and naso-jejunal (NJ) feeding tube for nutrition, respectively. It was planned to obtain tissue diagnosis radiologically using the BBF kit after cannulating the oesophagus to perform the gastrostomy and NJ. Procedural technique was performed identically in both cases.

After crossing the stenosis, the BBF sheath was placed over a stiff guide wire and the forceps were then moved into position of the stenosis using fluoroscopic guidance. Multiple biopsies were then taken (Fig. 1). After the biopsies were taken, with distal wire position secured throughout, the RIG and NJ was then inserted respectively. Both cases yielded positive histology for squamous cell carcinoma (SCC) which helped to guide further chemo-radiotherapy.

In the third case, a 68-year-old female, with history of lobular left breast carcinoma, re-presented with bone and back pain. CT demonstrated bone metastases and left hydronephrosis (Fig. 2). An attempt at retrograde biopsy and ureteric stenting by the urology team was unsuccessful. Therefore, antegrade ureteric stenting was required and it was planned to obtain tissue diagnosis radiologically using the BBF kit after cannulating the stricture. Following nephrostomy and passing a wire to the bladder, the BBF sheath was advanced over the wire into the position of the stricture and multiple biopsies taken (Fig. 3).

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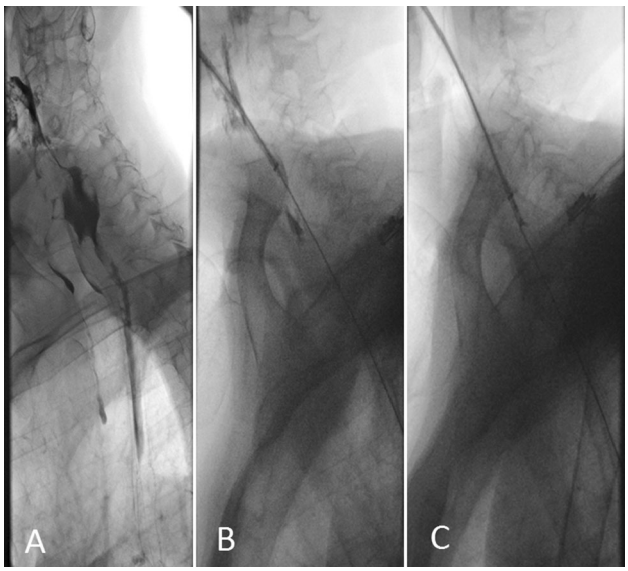

Fig. 1 **A** Water-soluble contrast swallow outlines the stricture. **B** BBF sheath placed over the wire and contrast injected to confirm the level of the stricture. **C** Forceps being deployed and multiple biopsies being obtained

All three patients' procedures were performed in the interventional radiology suite under conscious sedation, and all made uneventful recoveries. Fully informed written consent was obtained from all patients notifying them at the time of the procedure specifically that the equipment used for the biopsy was off label, but there was no other alternative to gain tissue to guide treatment. They were all happy with the explanation, with equipment and to proceed.

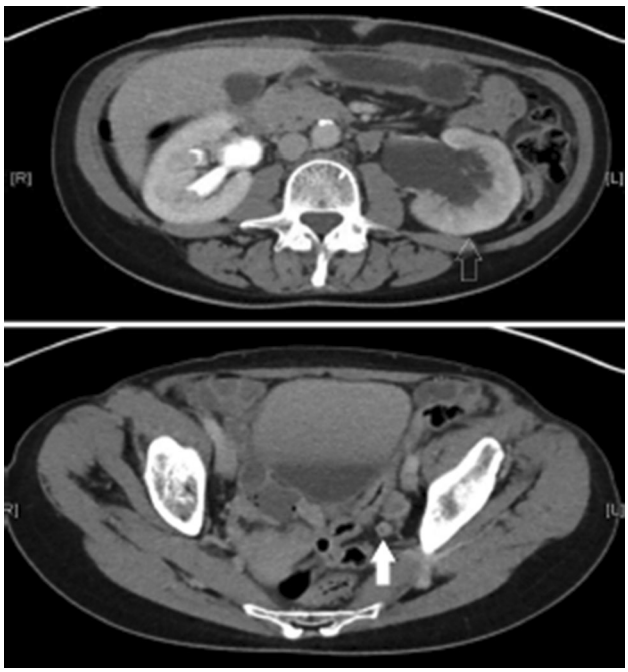

Fig. 2 CT demonstrating left hydronephrosis (clear arrow) and increased soft tissue at the distal left ureter (solid white arrow)

At least 5 biopsies/3 good macroscopic samples were obtained from each patient. There is no specific guide as to how many passes should be made even with use of the BBF in the biliary tract. Pre-procedural planning and imaging are essential in patient selection to ensure the best chance of success given the limited length of the sheath and forceps.

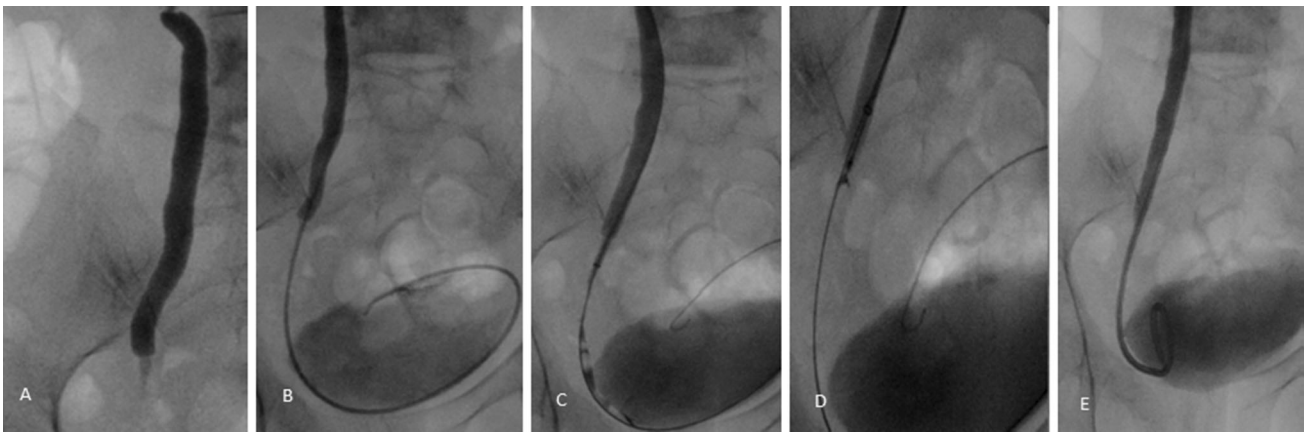

Fig. 3 **A** Contrast nephrostogram outlines the stricture. **B** Wire is manipulated through the stricture into the urinary bladder. **C** Distal ureteric stricture outlined with contrast injection via BBF sheath. **D** Forceps deployed and multiple biopsies taken. **E** 22-cm 8Fr ureteric stent sited following biopsies

These techniques appear safe and effective and have enabled ongoing histological guided oncological treatment for these patients.

Compliance with Ethical Standards

Conflict of interest On behalf of all authors, the corresponding author states there is no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Consent for Publication Consent for publication was obtained for every individual person's data included in the study.

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