

**B O N A M E D A** |

## COOK Medical: Transluminal Biliary Biopsy

## COOK Medical Transluminal Biliary Biopsy

- During the past 2 decades, many studies have verified the safety, reliability, and cost effectiveness of percutaneous fine-needle aspiration biopsy (FNAB) in the nonsurgical tissue diagnosis of various abdominal diseases
- The advent of the automated biopsy device, or biopsy gun, has further improved the ability to obtain adequate specimens for histopathologic analysis
- In addition, advances in imaging techniques have enabled the use of biopsy in virtually all anatomic areas
- Nevertheless, this method of tissue diagnosis is also not fully justified for **biliary tumors**, because these tumors are often **too small** to allow an accurate percutaneous puncture to obtain appropriate material
- They are often desmoplastic, making it difficult to establish a histologic diagnosis
- For this reason, other biopsy methods have been proposed for improving the rate of diagnosis of malignant biliary tumors, such as:
  - **Brushes**
  - **Forceps**

*Bile Duct: Analysis of Percutaneous Transluminal Forceps Biopsy in 130 Patients Suspected of Having Malignant Biliary Obstruction<sup>1</sup>*

*Gyoo-Sik Jung, MD, Jin-Do Huh, MD, Sang Uk Lee, MD, Byung Hoon Han, MD, Hee-Kyung Chang, MD, Young Duk Cho, MD*

## COOK Medical Transluminal Biliary Biopsy: PERCUTANEOUS BIOPSY IN BILIARY SYSTEM

- Bleeding complications
- Often difficult to target because lack of mass (very little amount of tumour tissue)
- Patients need to stop breathing
- 60% - 80% accuracy
- High chance on false negatives
- Multiple procedures (first drainage, later biopsy)



## COOK Medical Transluminal Biliary Biopsy: TRANSLUMINAL BRUSHING

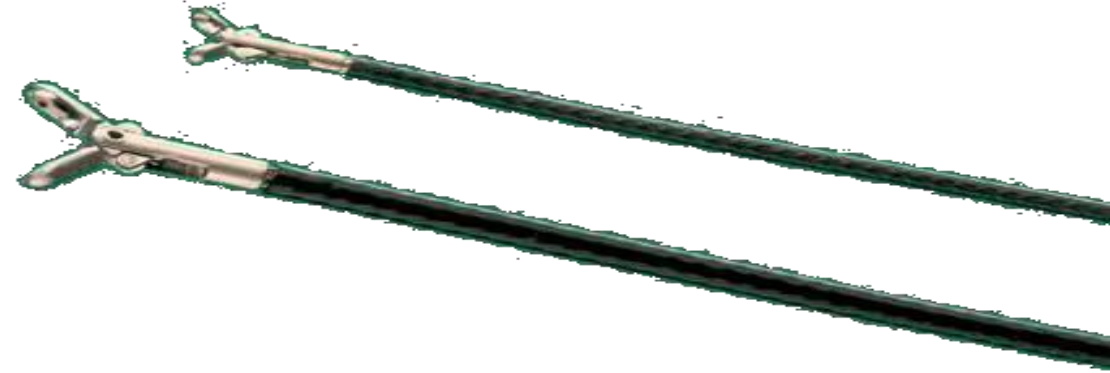
- Accuracy 30 – 50%
- Up to 70% false negatives



Results are still not satisfying

## COOK Medical Transluminal Biliary Biopsy: OTHER OPTIONS?

- Biopsy forceps which are commonly used for e.g. for myocardial biopsy
- Results?
- First 14 patients: 50% sensitivity
- Why?



## COOK Medical Transluminal Biliary Biopsy: PERCUTANEOUS BIOPSY BY FORCEPS

- Endoscopic forceps are not wire guided, are not targeting, not steerable which results in 30 % sensitivity
- Brushing even worse with a sensitivity of 6 %
- Coaxial endoscopy ( mother and baby- endoscope technique ) allowing that mucosa can be seen but is very time consuming, very expensive and if tumor is far away, it's very difficult to target.
- Using endoscopic approach percutaneously seems inappropriate as it will need a channel of 16 French while PTCD needs only 8,5 French
- Patient selection is very important:
  - No visible mass= probability of malignancy is very high
  - Patients with unclear jaundice
  - B II patients
  - Patients with gastric cancer
  - Whipple patients

## COOK Medical Transluminal Biliary Biopsy: KEY POINTS TO SUCCESS

- Method is “easy” to learn but still has a learning curve!
- To cross the lesion is the most difficult part but mandatory for success



intraductal



infiltrating

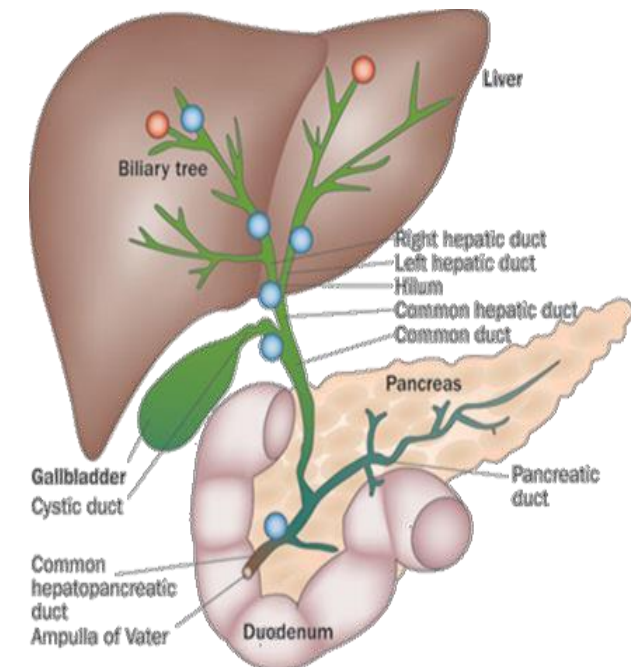


compressing

## COOK Medical Transluminal Biliary Biopsy

- So Improvements achieved by both are better but still not satisfying!
- Furthermore, those patients suffer on jaundice of (so far) unknown origin which needs to be treated
- PTBD is a well-established interventional radiologic procedure to treat patients with obstructive jaundice
- It can also be used to provide access to the intrahepatic and extrahepatic bile
- Duct for various biopsy instruments

- **Cross** lesion with **wire guide** to establish pathway control
- Work with long sheath = precise and stable position in target area
- Use the **sheath as a pusher** = directional control
- Biopsy of the obstruction, even in very small amount of tissue





## COOK Medical Transluminal Biliary Biopsy: RESULTS IMPROVED SIGNIFICANTLY

- Out of next 48 patients, 44 patients were diagnosed correctly!
- Calculated accuracy for biopsies performed with pushing technique:

48 correctly diagnosed out of 52

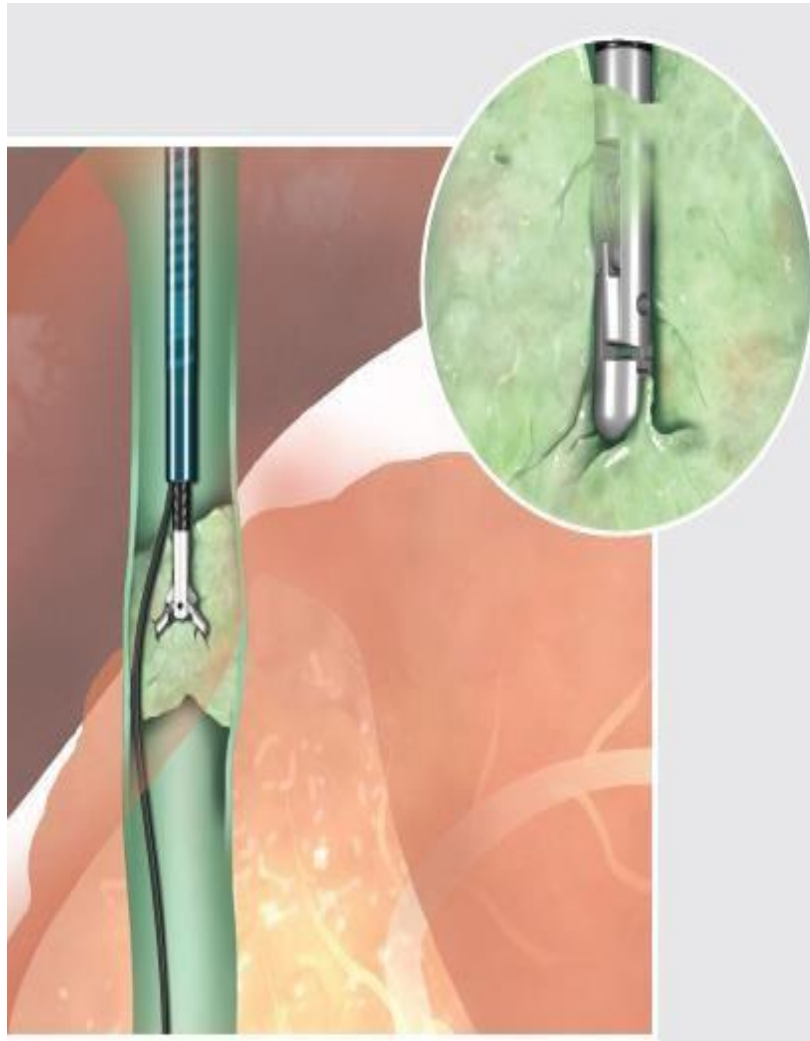
**Accuracy 92,3%!!!**

*(compared with percutaneous biopsy of ~60 %)*

## COOK Medical Transluminal Biliary Biopsy: KEY TO SUCCESS

- Pass the obstruction with guide wire and manipulation catheter to **CROSS THE LESION!**
- Put **tip of Flexor sheath** **in front of** obstruction while **leaving the wire across** the obstruction
- Advance forceps through Flexor **alongside** the guide wire, open forceps
- **PUSH!!!** the **HOLT** opened forceps by tip of sheath into obstruction and take sample (3 times)
- **CROSS and PUSH** technique is the key to success!
- Place drainage catheter or stent over the wire

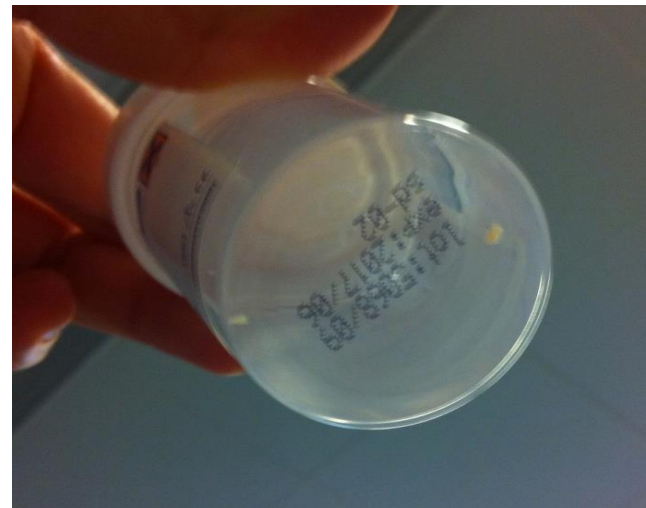
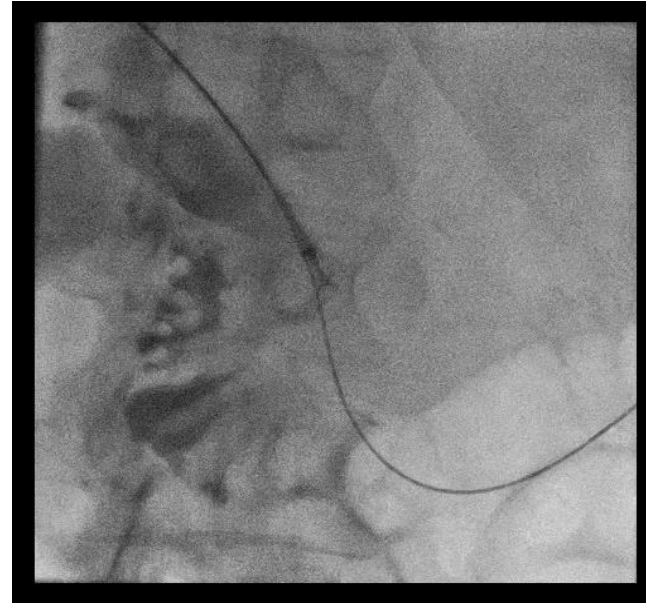
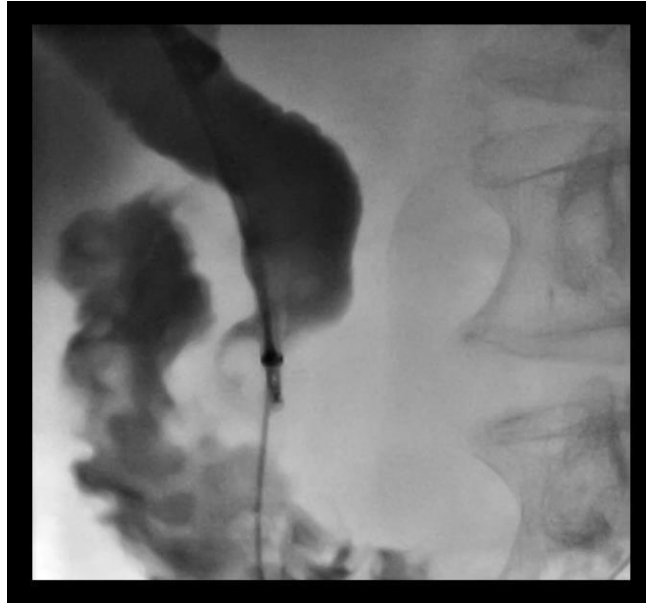
## COOK Medical Transluminal Biliary Biopsy



### TRANSLUMINAL BILIARY ACCESS AND BIOPSY FORCEPS SET

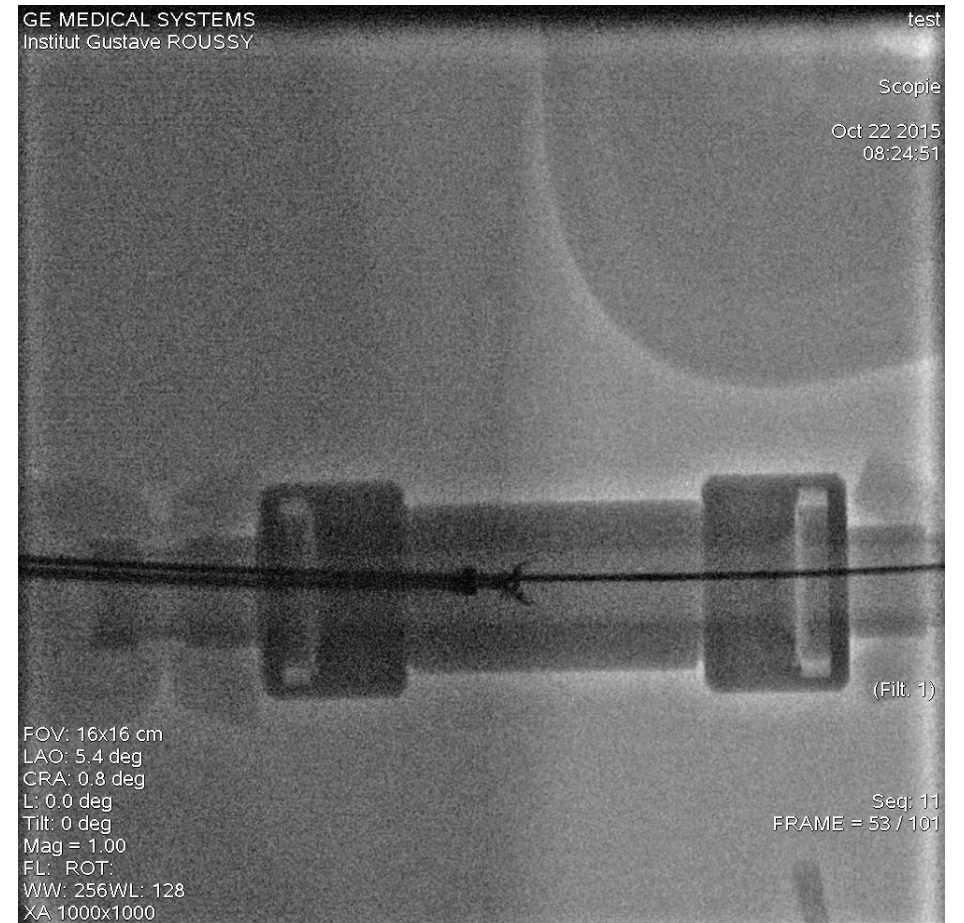
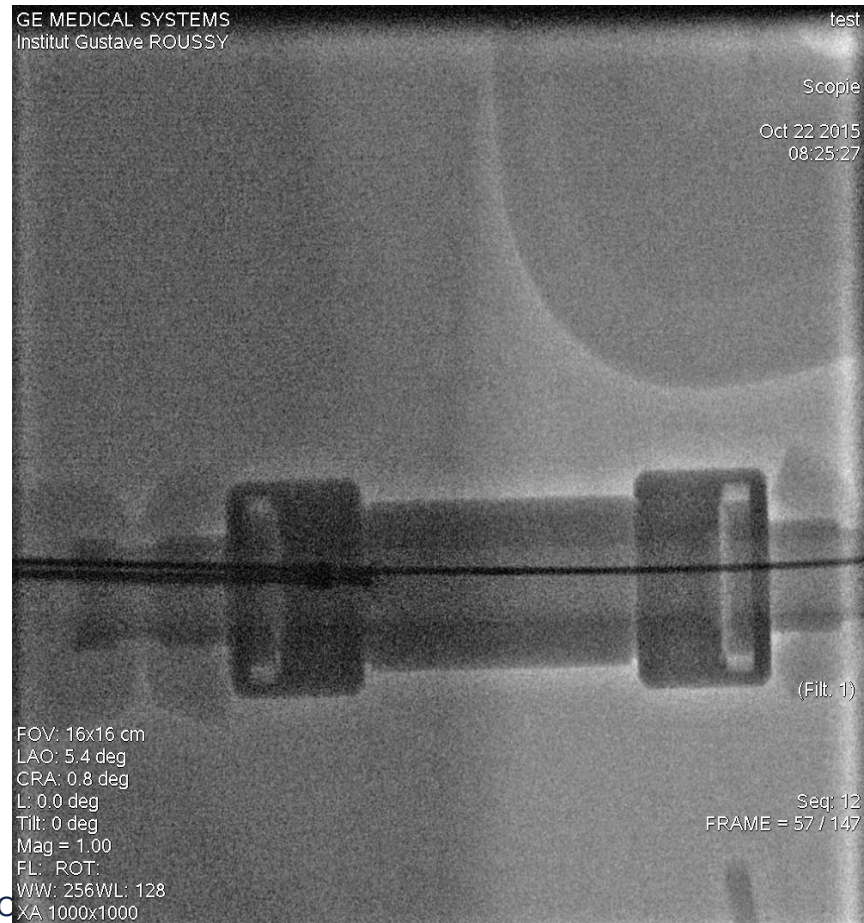
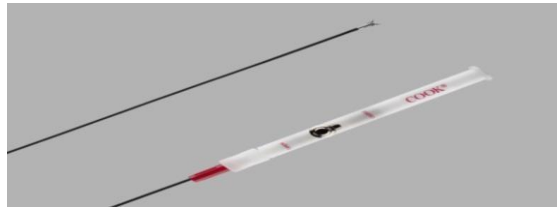
- Biopsy forceps allow single-handed torque control to achieve ideal cutting position without tip deflection.
- All components necessary to access the biliary tree for both percutaneous transhepatic cholangiography and transluminal biopsy are included.
- Cook's separate, complementary line of biliary drains and stents allows physicians to complete the procedure according to their preference.

## COOK Medical Transluminal Biliary Biopsy

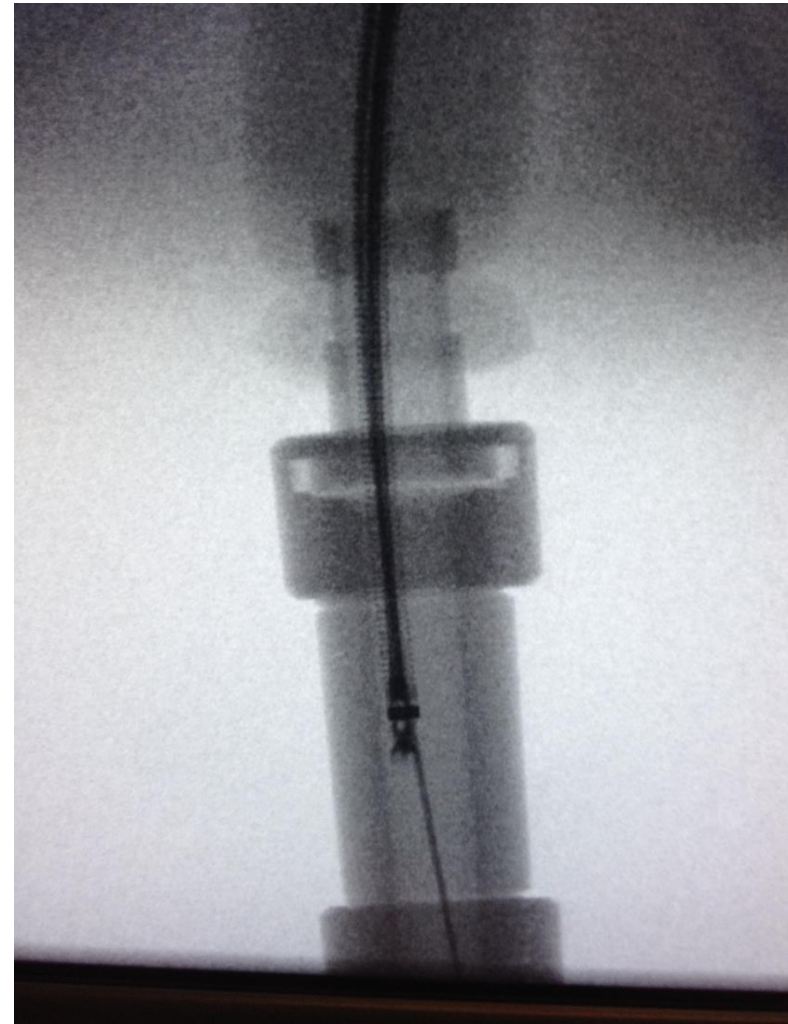
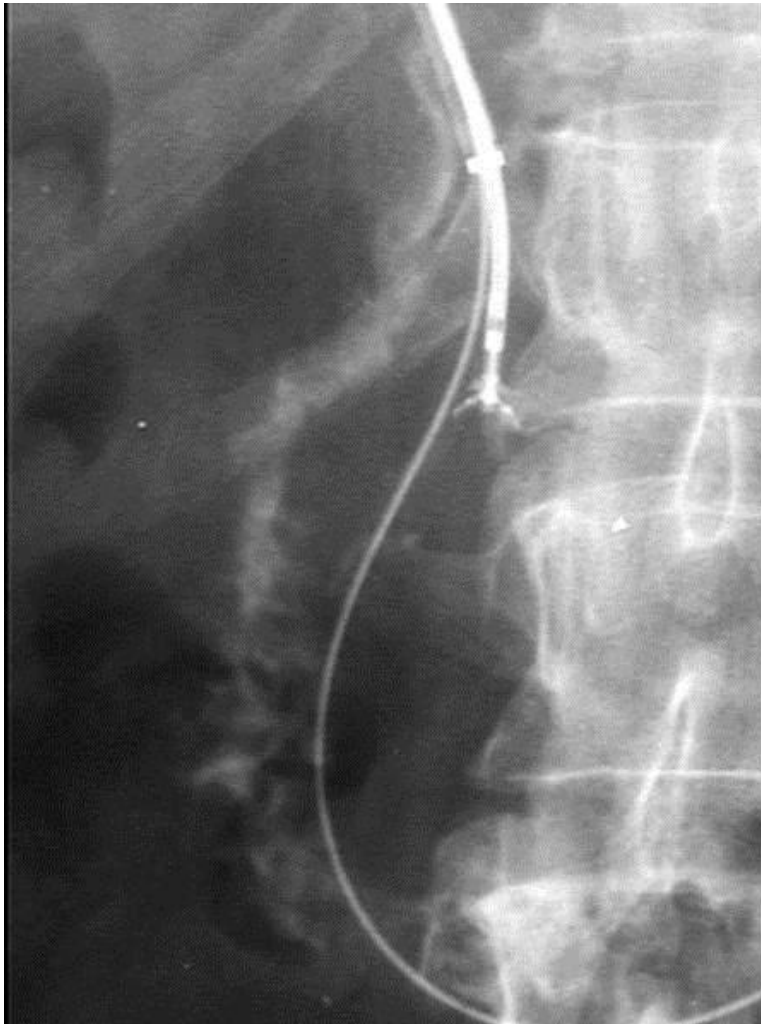




# COOK Medical Transluminal Biliary Biopsy

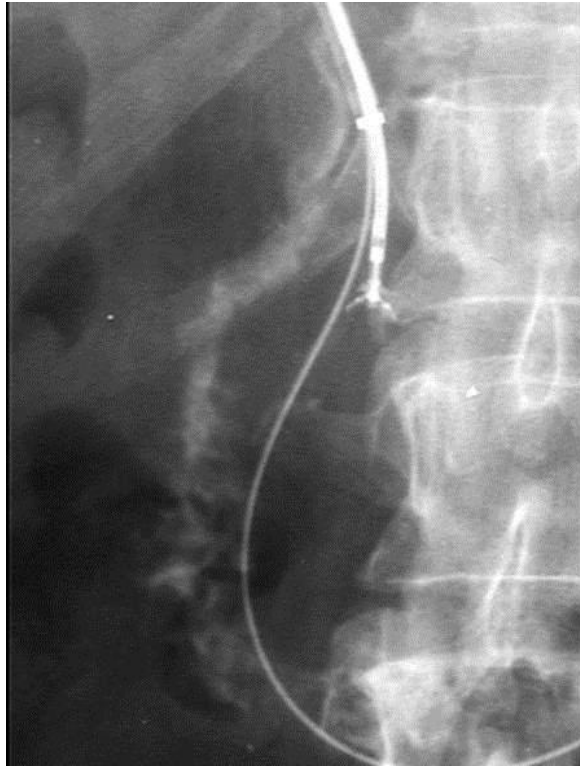


## COOK Medical Transluminal Biliary Biopsy





## COOK Medical Transluminal Biliary Biopsy



12



Biopsy forceps 7French "Safety" wire

### Usefulness and safety of biliary percutaneous transluminal forceps biopsy (PTFB): our experience

40 biopsies

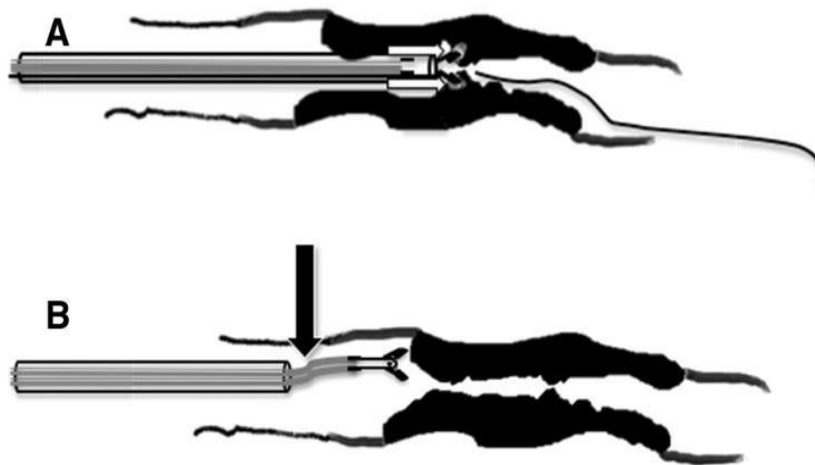
21 diagnosed malignancy, 13 diagnosed proven true-negative

6 false-negative (15%)

0 false-positive

(Ierardi AM, Minimally Invasive Therapy. 2013)

### Improved Accuracy of Percutaneous Biopsy Using “Cross and Push” Technique for Patients Suspected with Malignant Biliary Strictures



Sensitivity : 93.3%

Accuracy : 94.2 %,

[Cardiovasc Intervent Radiol.](#) 2015 Aug;38(4):1005-10. doi: 10.1007/s00270-014-0976-0. Epub 2014 Sep 6.

Improved Accuracy of Percutaneous Biopsy Using "Cross and Push" Technique for Patients Suspected with Malignant Biliary Strictures.

[Patel P](#), [Rangarajan B](#), [Mangat K](#).



## CONTACTS FOR MORE QUESTIONS

GRAŽINA MILKINTIENĖ

Junior Product Specialist

+370 626 97552

[grazina@bonameda.com](mailto:grazina@bonameda.com)

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