

INTRODUCTION

- Transurethral resection of bladder tumor (TURBT) is golden standard treatment for non-muscle invasive bladder cancer (NMIBC) with high recurrence ratio (33.8% - 36%). The possible reasons for high recurrence rate include tumor residual, tumor cell seeding, short of surgery experience and unidentifiable invasive depth of tumor pathology.
- Endoscopic submucosal dissection (ESD) using Hybrid Knife is a technique implanting from Gastroenterology. We use ESD technique to resect bladder tumor en-bloc with distinct base pathology.

OBJECTIVES

- To investigate the feasibility and efficacy of transurethral ESD using Hybrid Knife® (Erbe Elektromedizin GmbH, Tuebingen, Germany)) in patients with Ta/T1 bladder tumor.

METHOD

- 31 patients with lower-grade bladder urothelial carcinoma underwent transurethral ESD using Hybrid Knife. The procedure was described below:
 1. Coagulation markers were made at a distance of approximately 1 cm from the tumor margin.
 2. A water cushion was formed by submucosal injection of normal saline, and isolated submucosa from muscular layer. Then the tumor was elevated.
 3. Incision of bladder mucous membrane was performed with Hybrid Knife.
 4. Assisted by the tip of cystoscope sheath, we apply blunt and sharp methods to dissect submucosa until completely to remove the lesion and surrounding its mucosa.
 5. The resected tumor was removed out by a special specimen bag together with cystoscope and then used for pathology.
- All the patients were treated with immediate single instillation with epirubicin 50mg after operation (no longer 24 hours) and followed up every three months for a year with cystoscopy.

REFERENCE (selected)

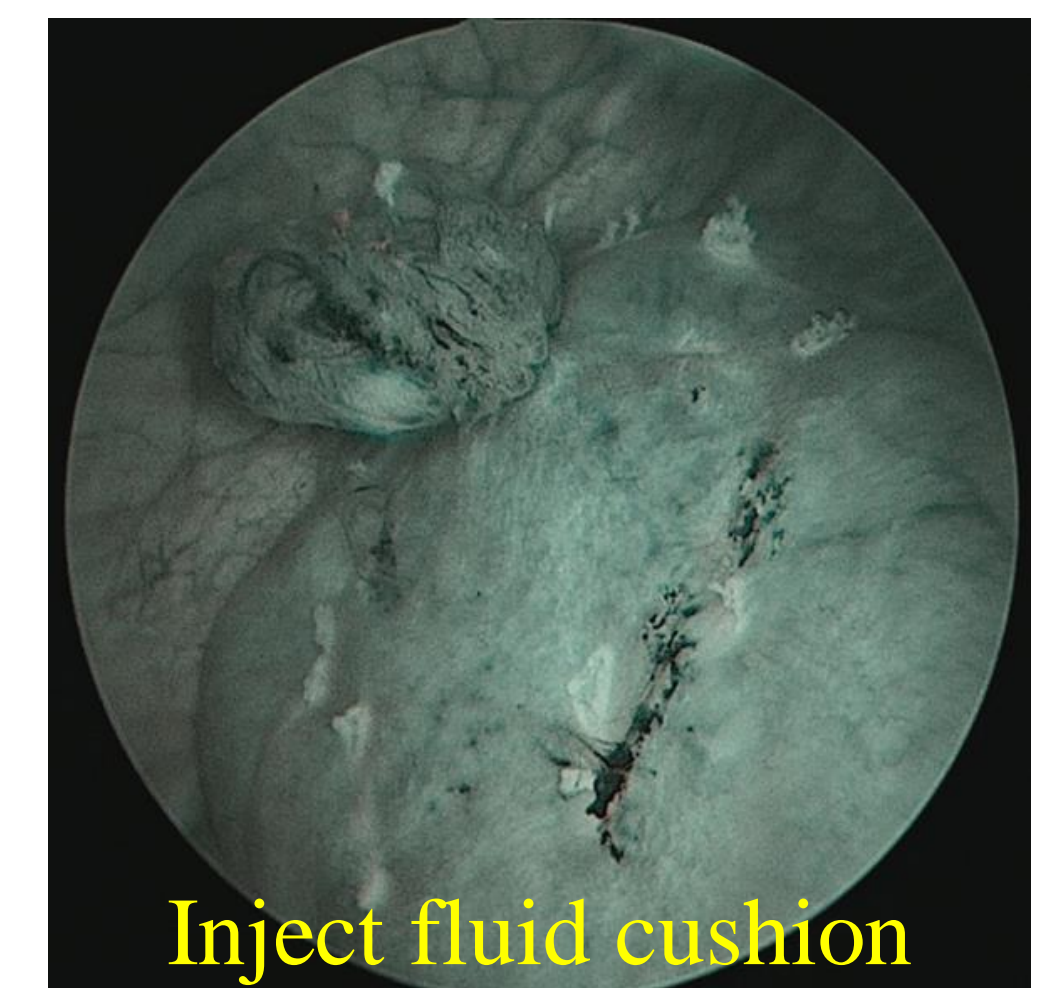
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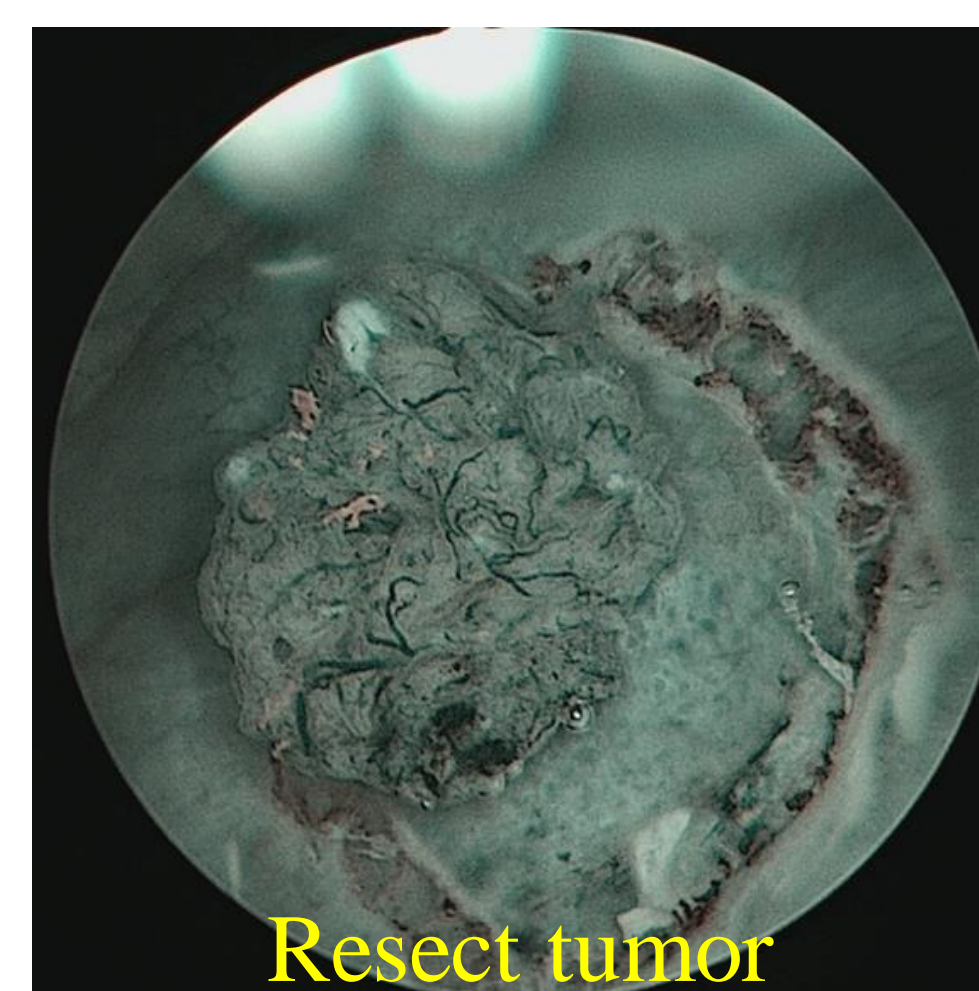
Hybrid Knife



Mark Margin



Inject fluid cushion



Resect tumor



Inspect wound surface



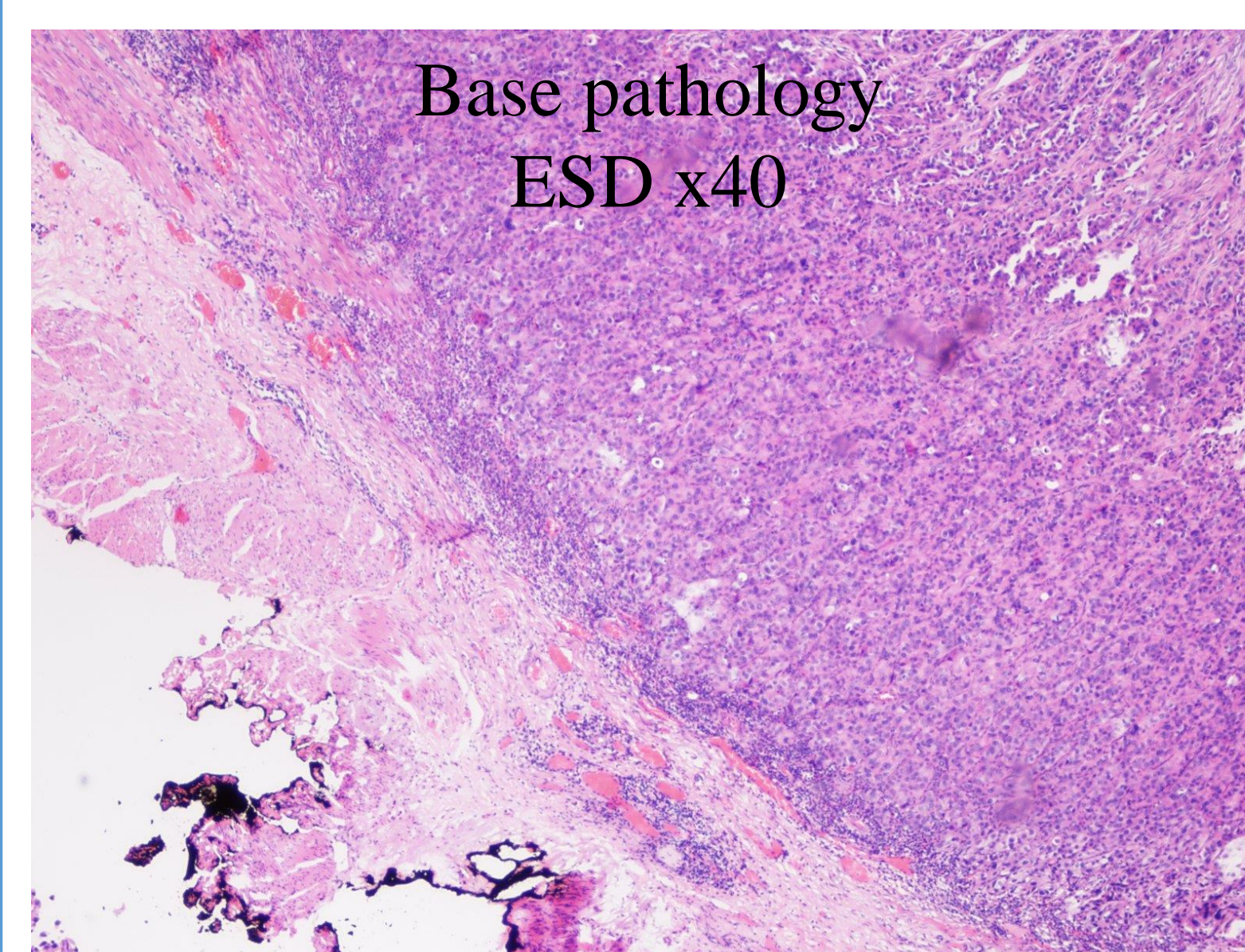
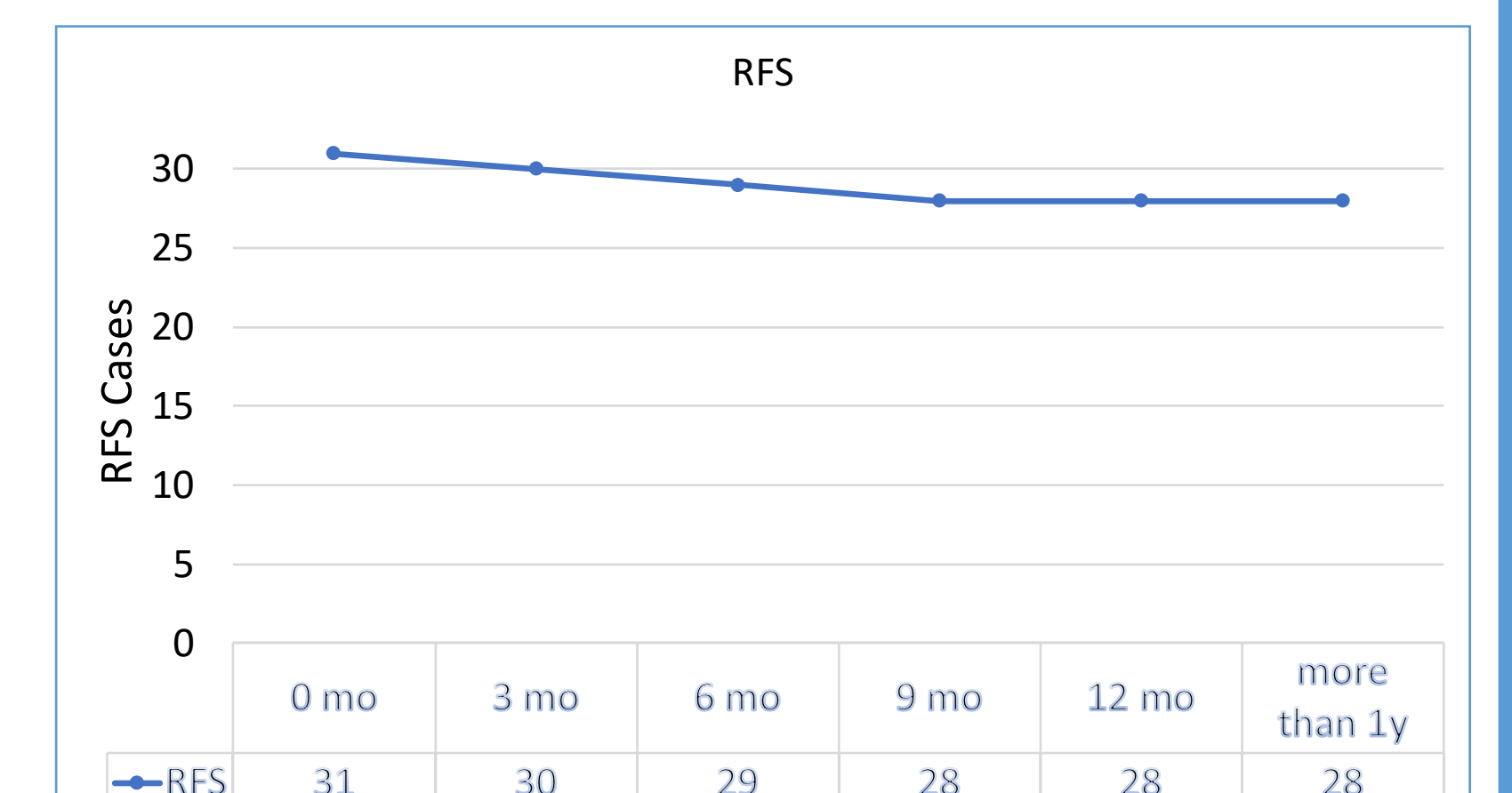
Take out specimen

RESULTS

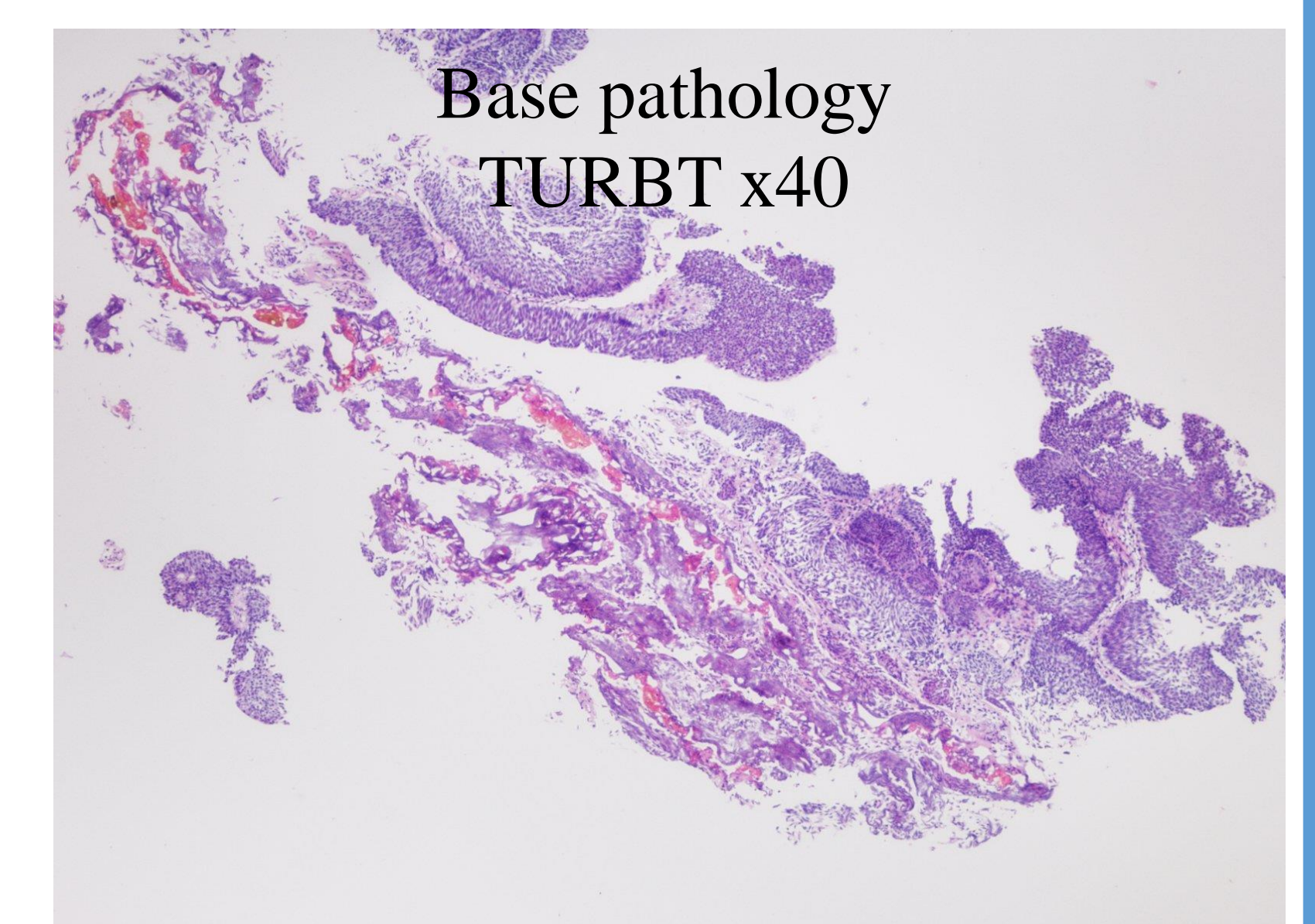
| Patients Description | | |
|-----------------------------|------------------|-----------------|
| Gender | Male 23 cases | Female 8 cases |
| Average age | 59.9 y | |
| Nr. of tumor | 2 tumors 2 cases | Single 29 cases |
| Primary or recurrence tumor | Pr. 29 cases | Re. 2 cases |
| Location of tumor | Right wall | 7 cases |
| | Left wall | 8 cases |
| | Posterior wall | 13 cases |
| | Trigone | 5 cases |
| Close the urethral orifice | Y 13 case | N 18 cases |
| Average max diameter | 2.1 cm (0.7-4.0) | |

| Perioperative Outcomes | |
|-------------------------------|------------------|
| Average Op. time | 16.7 min |
| Estimate bleeding Vol | <10ml |
| Obturator nerve reflection | 14 cases (42.4%) |
| Bladder perforation (tiny) | 7 cases (21.2%) |
| Take out en-bloc | 31 cases (93.9%) |
| Irrigation after Op. | 12 cases (38.7%) |
| Immediate single instillation | all |
| Catheter retention time | Only 24h |

| Pathologic Diagnosis | |
|----------------------|---------------------|
| Low-grade | 26 cases (83.9%) |
| High-grade | 2 cases (6.5%) |
| PUNLMP | 3 cases (9.7%) |
| pT stage | Ta 26 cases (83.9%) |
| | T1 5 cases (16.1%) |



Base pathology
ESD x40



Base pathology
TURBT x40

CONCLUSION

- Transurethral ESD in patients with Ta/T1 bladder tumor is feasible and effective with safe oncologic outcomes.
- ESD technique allows the bladder tumor to be resected completely en-bloc, avoiding the risks of TURBT, such as tumor residual, tumor cell seeding.
- Meanwhile ESD technique can provide the complete and distinct mucosa and submucosa to pathologists to identify tumor invasion depth.