

INITIAL EXPERIMENTAL EVALUATION OF WIRELESS CAPSULE ENDOSCOPE IN THE RABBIT BLADDER DURING VOIDING

Hypothesis / aims of study

There was not yet report on visualizing flow at voiding from bladder neck in vivo. We visualized urine flow from internal view of bladder neck using by wireless capsule endoscopes (WCEs) for cystoscopy at voiding in vivo.

Study design, materials and methods

Methods: Experimental evaluation of capsule cystoscopy was performed in a 5-kg female rabbits(n=6). The capsule was inserted after incision of bladder. Images were continuously transmitted at a rate of four frames per second to a laptop computer and processed using proprietary software. Manipulation of the WCE within the bladder was performed using a set protocol. We measured the ability to deploy and manipulate the capsule within the bladder. Feasibility of capturing and retrieving images in real time was also assessed. We used air(injection by syringe) and dye(intravenous administration of indigo carmine) as urine flow tracer. Results: The WCE was efficiently deployed and manipulated within the bladder passively by manual. The entire bladder mucosa real-time image transmission and capture was visualized.

Results

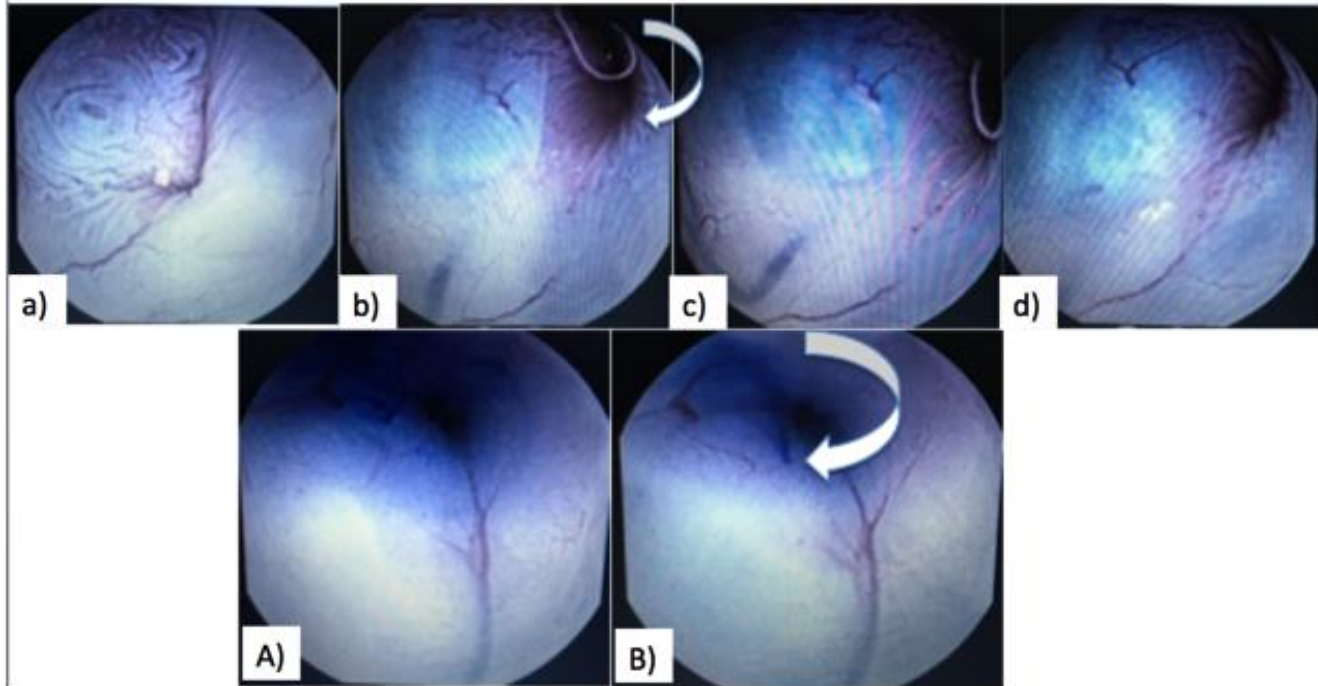
The urine flow rotated clockwise from ventral to visceral at bladder neck during voiding Fig(a): closed bladder neck before voiding, b)c) : air bubble rotated from the 12 o'clock position to the 3 o'clock position and d) sucked to internal urethra, no apparent of the air bubble)(A) the dye was visualized on closed bladder neck before voiding(B) when bladder neck begun to open , the dye visualized e vortex with rotation clockwise like crescent moon.

Interpretation of results

By this device, urine flow could be visualized a vortex at the bladder neck mucosa during voiding.

Concluding message

We had first report on vizualization of vortex of rabbit bladder neck.



Disclosures

Funding: No **Clinical Trial:** No **Subjects:** ANIMAL **Species:** Rabbit **Ethics Committee:** University of Nagoya