

Ability of new Micro-hole Zone catheters to drain sediment compared to conventional eyelet catheters

Lene Feldskov Nielsen¹, Sotiria Athanasiadou¹, Betina Suldvart¹, Per Bagi²

¹Coloplast A/S, Humlebæk, Denmark, ²Department of Urology, Rigshospitalet, Copenhagen, Denmark

Aim

This study investigated the ability of a novel Micro-hole Zone urinary intermittent catheter (Figure 1) to drain sediment present in urine, compared to a conventional eyelet catheter.

Methods

Three randomized, cross-over clinical studies investigated the performance of Micro-hole Zone catheters (featuring 80+ micro-holes), compared to conventional eyelet catheters¹. The subjects included were healthy male and female volunteers, and male and female users of intermittent catheterisation (IC). Urine samples were collected after draining with both catheters. The number and size of sediment in the urine were analyzed via automated microscopy.

Results

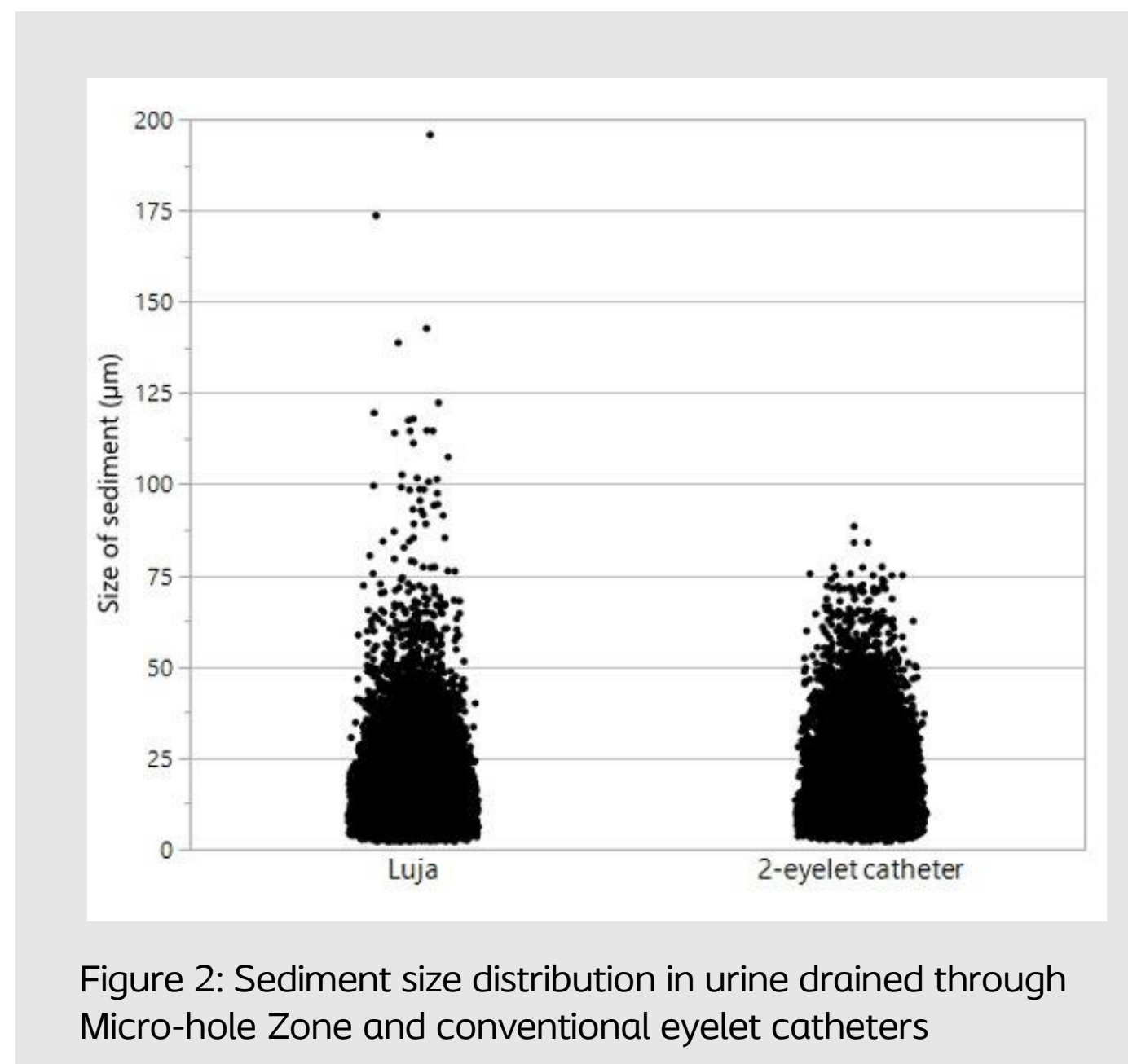
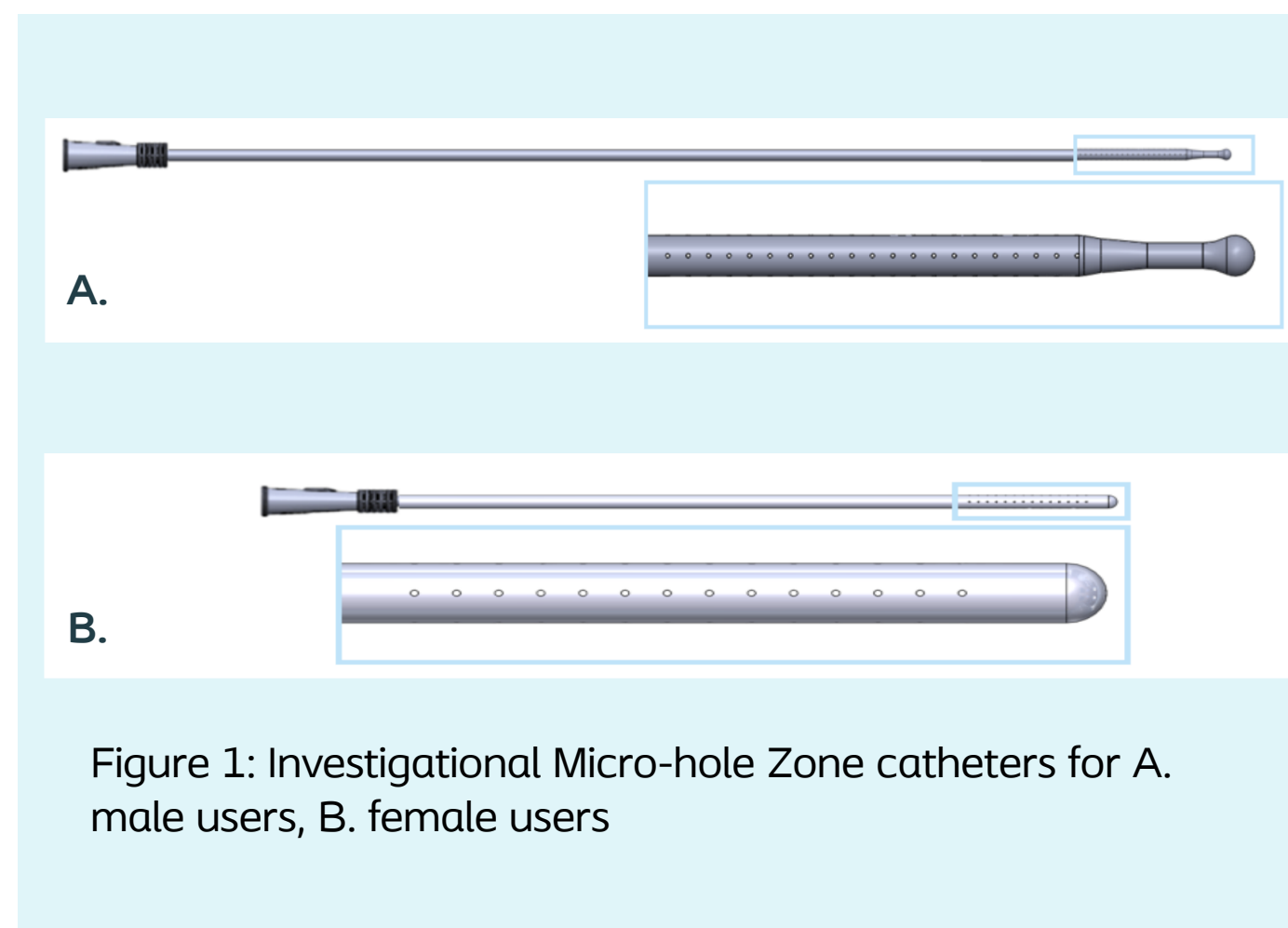
The analyses showed most sediment to be smaller than 50 μm , with the largest sediment reaching approximately 200 μm .

There was no statistical difference in the ability of the two catheter types to drain sediment from urine. However, the Micro-hole Zone catheter drained sediment with larger size compared to the conventional eyelet catheter (Figure 2).

The types of sediment identified corresponded to that reported in the literature; therefore, these urine samples were considered uncomplicated.

Discussion & Conclusion

The analyses showed that the sediment passing through either type of catheter was smaller than the size of the micro-holes (400 μm). It also demonstrated that Micro-hole Zone catheters drained larger size sediment in samples collected from healthy volunteers and IC users. The improved performance of the Micro-hole Zone catheters is most likely due to the design of the drainage zone, that extends all the way to the bottom of the bladder neck, ensuring continuous drainage of urine and sediment from the base of the bladder.



¹Landauro MH, Vaabengaard R, Jacobsen L, et al. Improved performance with the intermittent urinary micro-hole zone catheter: a combined analysis of three randomised controlled studies. UKCS Annual Scientific Meeting; Sheffield, United Kingdom 2023.