Commercial balloons make a significant contribution to the running costs of endoscopic ultrasonography (EUS) units. We compared 10 commercially available EUS balloons for the Olympus GF-UMT140 (Olympus Optical, Hamburg, Germany) with 20 latex balloons made of latex glove fingers and attached with rubber ligature bands (Figure 1).

The two types were compared with regard to the time needed to position the balloon, the time required to inflate the balloon to a diameter of 3 cm, and the diameter after the balloon had been held at 3 cm for 1 min. There were no patients with stenotic tumors.

Application of the commercially available EUS balloons required a mean of 17.1 s (SD 7.2 s, range 7–29 s) and that of custom-made balloons required a mean of 46 s (SD 23, range 22–93 s; P < 0.001 with Student’s t-test). The balloon diameter after inflation to a diameter of 3 cm and holding for 1 min was 2.8 cm (SD 0.47, range 1.5–3.0 cm) versus 2.7 cm (SD 0.5, range 1–3 cm; P = 0.55) for commercially available and custom-made balloons, respectively. There were no differences in the time required to inflate the balloons to a diameter of 3 cm or the time required to remove the balloons. The average examination time was approximately 25 min.

The cost of one commercial balloon was € 13.91. After purchase of the conical rubber-band applicator (€ 22), one custom-made EUS balloon with a rubber band costs € 0.37 per examination. Custom-made EUS balloons thus provide an examination quality comparable to that of commercially available EUS balloons at a considerably reduced cost.

In routine clinical use we have encountered an important variability in the thickness of latex glove finger ends even within the same batch of gloves. This was not observed in the series studied, but can lead to artefacts especially where contact pressure is limited (stomach): This can hamper the quality of the EUS picture. An alternative with less latex thickness are latex finger cots that can be fixed in a similar manner as described above.

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