A cost-saving measure for ultrasound-guided musculoskeletal injections

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Received: 18 December 2017 / Accepted: 22 March 2018 / Published online: 7 April 2018
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Dear Editor,

We wish to highlight a novel cost-saving measure that we have introduced in our institution while performing ultrasound-guided musculoskeletal injections (MSKI). MSKI are relatively safe procedures, with a low risk of serious complication. Like other ultrasound-guided procedures, MSKI require aseptic technique and appropriate preparation of the ultrasound probe to prevent contamination of the injection site. Contamination of the injection site by both ultrasound probes and ultrasound gel has been reported [1, 2].

Different techniques have been reported to provide a sterile ultrasound probe surface, including commercially available ultrasound probe covers, sterile gloves and transparent dressings [3–5]. A number of probe covers are commercially available (e.g. ultrasound probe cover, Fannin UK LTD, Swandicote, DE12 7DT UK, probe cover, 365 Healthcare, Worcestershire WR9 9AX and ultrasound probe cover, Vygon UK LTD, Swindon, SN25 4DL). The use of sterile gloves has also been described using various techniques, including the use of either the whole glove or a single finger portion of the glove [4]. The former technique involves multiple manoeuvres to fasten the fingers of the glove and invariably leads to the accumulation of air pockets. The latter technique provides “probe only” protection, leaving the cord unsterile and a potential source for contamination. Similarly, the use of transparent sterile adhesive dressings provides “probe only” protection and has been described with the use of surgical gowns to extend the sterile field [5].

At our institution, the dressing packs used for MSKI contain a sterile disposal bag which we use as a modified probe cover. The content of the packs is shown in Fig. 1a (Synergy Health, Lancashire, PR7 7NB, UK). The dressing pack is CE marked and costs €0.61 per pack (GBP£0.54). Nonsterile ultrasound gel is placed directly on the probe surface and the bag is then unfolded over the probe by the operator wearing sterile gloves. The bag is then loosely twisted around the lead which extends the sterile field to include the cord (Fig. 1b, c). The use of additional sterile coupling gel on the surface of the covered probe is dependent on operator preference. The use of the disposal bag, which is otherwise disposed of, eliminates an additional cost of either a separate commercially available probe cover, additional set of gloves or transparent dressing.

We perform approximately 2200 ultrasound-guided MSKI annually. To provide a price comparison, the ultrasound probe cover costs €1.73 (GBP£1.54, Fannin UK LTD) in our institution, whilst sterile gloves cost €0.78 per pair (GBP£0.69). The use of a commercially available probe cover adds approximately €3818 (GBP£3388) annually to the cost of MSKI in our institution. Although not in common use in our institution, the use of sterile gloves as a modified probe cover would potentially add approximately €1715 (GBP£1518) to the cost of MSKI.

Given the ongoing financial constraints within our health system, it is prudent to remain conscious of procedural costs and consider innovative cost-saving ideas when treating patients where possible.

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Fig. 1 The equipment used for MSKI in our institution is demonstrated in image A, including the contents of the dressing pack used [orange disposal bag (block arrow), dressing towel (arrow head), forceps (asterisks), tray (open curved arrow) and swabs (block curved arrow)]. The syringe and needle (open arrow) and chlorhexidine solution within the tray are not included in the pack. Image B demonstrates the linear high-frequency probe frequently used and image C demonstrates the probe covered by the orange disposal bag

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval Approval by an ethics committee was not applicable in this letter to the editor.

Informed consent For this letter to the editor formal consent is not required.

References

1. Sherman T, Ferguson J, Davis W, Russo M, Argintar E (2015) Does the use of ultrasound affect contamination of musculoskeletal injection sites? Clin Orthop Relat Res 473(1):351–357. <https://doi.org/10.1007/s11999-014-3903-4>
2. Abdelfattah R, Aljumaah S, Algahtani A, Althawadi S, Barron I, Almofada S (2017) Outbreak of *Burholderia cepacia* bacteraemia in a tertiary care centre due to contaminated ultrasound probe gel. J Hosp Infect. <https://doi.org/10.1016/j.jhin.2017.09.010> (Epub ahead of print)
3. Marhofer P, Fritsch G (2015) Sterile working in ultrasonography: the use of dedicated ultrasound covers and sterile ultrasound gel. Expert Rev Med Dev 12(6):667–673. <https://doi.org/10.1586/17434440.2015.1084872>
4. Suresh V, Asish K, Devi PS (2015) Improvised glove barrier for ultrasound probe protection. Anesth Essays Res 9(3):448–449. <https://doi.org/10.4103/0259-1162.158003>
5. Paliwal B, Bhatia P, Kothari N, Mohammed S (2016) Aseptic handling of ultrasound probe: an easy solution. Indian J Crit Care Med 20(9):554–555. <https://doi.org/10.4103/0972-5229.190373>