Improving access to ultrasound-guided large volume abdominal paracentesis in a district general hospital

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Introduction

The 2020 British Society of Gastroenterologists (BSG) guidelines on the management of ascites in cirrhosis recommend that ultrasound (US) guidance should be considered during large volume paracentesis (LVP) to reduce the risk of adverse events.[1,2] It is also suggested in the BSG safety toolkit where two landmark-based attempts have failed.[3] At our hospital, we noticed a delay in US-guided LVP compared with LVP using the landmark technique. We aimed to improve the time between decision for LVP to the procedure being undertaken (TLVP) using quality improvement (QI) methodology.

Materials and methods

We retrospectively analysed LVP procedures over a 19-month period ending August 2020 (n = 89) and divided these into US vs landmark technique. We demonstrated a delay in TLVP in the US group. We then set out to improve TLVP using plan, do, study, act (PDSA) cycles. Our primary driver was lack of availability of US, and so we sought to improve access to US via a same-day 'hot slot' agreement with our radiology department (Fig 1). Following this, a ward-based US was procured for the gastroenterology ward. We measured the TLVP after each intervention and charted the results over time.

Results and discussion

Prior to our intervention, the average TLVP was 2 days in patients requiring US-guided LVP and 1 day in the landmark group. Following our second intervention, TVLP in patients requiring US-guided LVP was 1 day in both groups (Fig 2).

The primary limitation of the QI project was small sample size. A possible reason for this was the short data collection period following each intervention. We also noted that a lot of LVP procedures were performed in the Planned Intervention Unit (PIU) rather than as an inpatient procedure and therefore were not included in our sample. There may well have been a shift towards outpatient LVP, given that the data collection period took place during the emergence of the COVID-19 pandemic. We also noted that the PDSA cycles overlapped with junior doctor changeover. The is a potential confounding factor, as clinicians who gained experience in US-guided LVP moved to other departments, leading to month-to-month fluctuations in the frequency of US use.

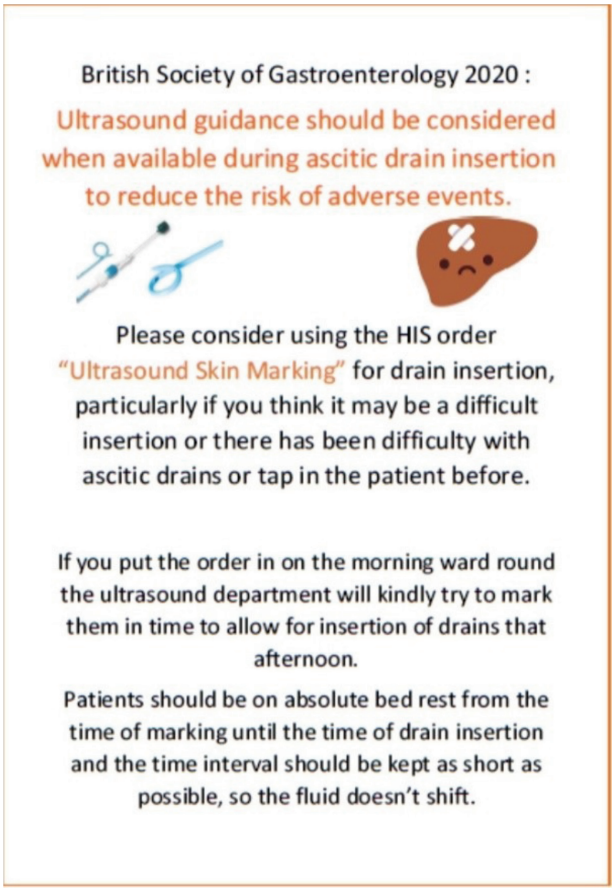

Fig 1. Poster advertising the 'hot slot' system for departmental ultrasound.

Conclusion

We implemented a successful change intervention to improve access to US-guided LVP. We hope that this improvement will be sustained by ongoing PDSA cycles. Future directions for the project include improving training in the use of US to safely mark ascites, as currently there is no formal training or accreditation process in our hospital. In subsequent cycles, we would like to demonstrate not only an improvement in TVLP, but also an improvement in overall length of stay and improved patient experience. ■

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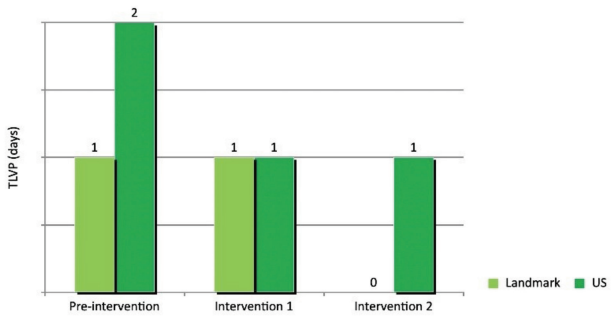

Fig 2. Time between decision for LVP to the procedure being undertaken (TLVP) across the three stages of the project.

References

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2 Cho J, Jensen TP, Reierson K, Mathews BK, Bhagra A, Franco-Sadud R *et al*. Recommendations on the use of ultrasound guidance for adult abdominal paracentesis: a position statement of the Society of Hospital Medicine. *J Hosp Med* 2019;14:E7–E15.

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