



PROCEDURAL SKILLS ASSESSMENT OF RESIDENT PERFORMED LAPAROSCOPIC CHOLECYSTECTOMY BY DIRECT OBSERVATION (DOPS) AND VIDEO OBSERVATION (VOPS): A PILOT STUDY.

Surgery

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ABSTRACT

Introduction: Only 40% of trainees found direct observation of procedural skill is (DOPS) useful in a survey from postgraduate medical education and training board in UK. In India, due to limited faculty in medical colleges and increasing workload, multiple trainees cannot be accurately assessed at the same time. **Objectives:** To compare VOPS and DOPS in laparoscopic cholecystectomy (LC) for training residents. **Materials And Methods:** This study was conducted in the department of surgical gastroenterology, SVIMS from May 2018 to July 2018 after ethics committee approval. In the DOPS group, laparoscopic cholecystectomy (LC) performed by residents were assessed and scored accordingly by faculty directly when the resident was performing the procedure. In VOPS group, LC performed by residents was assessed and scored by the faculty after analysing the video recording of the procedure. Procedural and feedback scores were recorded and analysed. A total of 60 cases were assessed, performed by 5 residents. **Results:** The mean score in VOPS is 41.96 ± 3.31 (range 34- 48) and in DOPS is 42.1 ± 2.94 (range 36-47). There was no statistical difference (p-value is 0.96). There was no statistical difference in feedback scores (range 3-5 in both groups, p-value is 0.27) **Conclusion:** In our study, VOPS was comparable to DOPS for training residents in procedural skills of laparoscopic cholecystectomy and can be used as an alternative for DOPS.

KEYWORDS

DOPS, VOPS, Laparoscopic cholecystectomy, procedural skills.

INTRODUCTION

Poor training during residency can lead to surgical incompetence of trainee doctors.

Such training programmes may not be preferred by postgraduate residents. This can be improved by training, assessing, and providing feedback for procedural skills. Only 40% of trainees found direct observation of procedural skill (DOPS) useful in a survey from postgraduate medical education and training board in the UK. Due to limited faculty in medical colleges and increasing workload, multiple trainees cannot be accurately assessed at the same time. DOPS was introduced for the assessment and provision of feedback on procedural skills while doing procedures [1]. This helps to rate the skills and provide feedback. Faculty can do the scoring at available times. However, video observation of procedural skills (VOPS) was introduced to overcome the limitations of DOPS like faculty availability and scheduling. In addition, observation bias and resident anxiety can be reduced [2]. There are very few studies in published literature comparing DOPS and VOPS for surgical training. Therefore, this study was conducted to compare both the assessment methods and resident feedback.

OBJECTIVES

To compare VOPS and DOPS in laparoscopic cholecystectomy (LC) for training residents.

MATERIALS AND METHODS

This study was conducted in our department from May 2018 to July 2018 after ethics committee approval. In the DOPS group, laparoscopic cholecystectomy (LC) performed by residents were assessed and scored accordingly by faculty directly when the resident is performing the procedure. In VOPS group, LC performed by residents was assessed and scored by the faculty after analysing the video recording of the procedure. Procedural and feedback scores were recorded and analysed. A total of 60 cases performed by 5 residents were assessed. The scoring system for laparoscopic cholecystectomy included the following steps: 1. Port placement, 2. Infundibulum exposure, 3. Posterior dissection, 4. Anterior dissection, 5. Calot's dissection (Critical view), 6. Clipping and cutting cystic duct and artery, 7. Dissecting Gall bladder from bed, 8. Haemostasis, 9. Gallbladder removal, and 10. Port closure. Each step was scored on a scale of 1-5. The final score for each procedure ranged from 10-50.

The resident feedback questionnaire included the following questions:

1. Did you perform the procedure without any apprehension according to the method you are trained?
2. Did your skill improve compared to the previous case?
3. Do you think the present method of guidance is better than the other method.
4. Do you consider your mentor inclined to teach you and improve your skill.
5. Do you consider your mentor skilled enough to teach in current method of guidance and improve your skill.

If the answer is YES, the the score is 1, and for NO, score is 0. The range of feedback scoring is from 0-5.

RESULTS

Sixty laparoscopic cholecystectomies were evaluated. They were evaluated by direct and video observation. The mean score in VOPS is 41.96 ± 3.31 (range 34- 48) and in DOPS is 42.1 ± 2.94 (range 36-47). There was no statistical difference (p-value, 0.96). There was no statistical difference in feedback scores (range 3-5 in both groups, p-value, 0.27). Each resident had an experience of performing 10 laparoscopic cholecystectomies prior to inclusion in the study.

DISCUSSION

Training residents in surgical skills and providing feedback is an important challenge for faculty in academic institutions. Proficiency in such skills is important for performance in a number of healthcare domains [3]. These skills depend on the level of training like graduation, post-graduation and sub-specialisation. The procedural expertise depends on the training and stage of graduation. Traditionally graduates were expected to perform at a satisfactory level after completion of the course or after performing a certain number of procedures [4]. Technical expertise in procedural skills can improve patient safety and reduce complications. Moreover, in a competency-based curriculum, at the end of the course, the trainee should achieve the defined competencies.

DOPS has been used for training medical students and residents in a range of various skills and specialties. Assessment of trainees is needed at various time points during the course with various procedures and by different faculty [5]. These opportunities help the residents to receive feedback and identify areas of weakness and strengths for further improvement. Further, repeated observations can lead to improved trainee satisfaction and outcomes [6].

VOPS is a method where procedural videos are recorded for

assessment. VOPS is feasible, reliable, and valid for laparoscopic procedures [2]. In addition, the advantages include objectivity, time-efficiency, and feasibility [7]. They can be done by various methods like personal video-recording technology like single-lens reflex cameras or sports cameras [8]. Previous studies with VOPS have shown an increase in the objective structured assessment of technical skills scores by video coaching [9]. Previous studies comparing DOPS and VOPS showed that direct observation is better than VOPS in details [10]. Also, DOPS has better face validity than VOPS [11].

The present study has some limitations. First, inter-rater variability for rating the skills was not assessed. Second, the impact of the feedback on future performance was not objectively assessed at a different time point though resident feedback was obtained. Third, the technical skills and expertise can vary between residents. However, to minimise this only residents who performed a minimum number of independent cases were included.

CONCLUSION

In our study, VOPS was comparable to DOPS for training residents in procedural skills of laparoscopic cholecystectomy and can be used as an alternative to DOPS. However, behavioural skills in the operative room cannot be assessed by VOPS.

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