

Short Communication

Confidence in repair of obstetric anal sphincter injuries and objective assessment in obstetricians

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Abstract

Objective: To describe attending obstetricians' self-reported confidence to recognize and repair Obstetric Anal Sphincter Injuries (OASIS), assess knowledge of anatomy and risk factors for OASIS and evaluate the need for a protocol.

Study design: A questionnaire was distributed to attending obstetricians at seven major medical centers. The survey was divided into categories including demographics, self-reported confidence at recognition of OASIS, self-reported competence at OASIS repair, questions on anatomy and risk factors for OASIS and need for a protocol for OASIS repair.

Results: We collected 82 questionnaires for a response rate of 40.2 percent. Twenty-two (26.8%) and 59 (72%) survey respondents were respectively mostly confident or very confident and only one (1.2%) was somewhat confident at OASIS recognition. Thirty-two (39%) participants felt mostly competent, and 47 (57.3%) felt very competent at OASIS repairs. Percentage of correct answers to the objective questions on anatomy and risk factors ranged from 45.1 to 58.5. Overall performance in objective questions did not differ by self-reported competence in repair of higher order lacerations ($p=0.09$).

Conclusions: Our study shows that self-reported confidence in detecting OASIS and competence in repair of OASIS does not correlate with knowledge of anatomy and risk factors of OASIS.

Synopsis

Attending obstetricians self-reported confidence at Obstetric Anal Sphincter Injuries (OASIS) recognition and repair compared with objective measurement of OASIS knowledge.

Introduction

Obstetric anal sphincter injuries (OASIS) which include third and fourth degree lacerations are estimated to occur in 3.3 to 11% of vaginal deliveries [1-3]. Their occurrence is associated with long-term sequelae including flatal and fecal incontinence as well as decrease in sexual function [4,5]. Given their lasting impact on women's quality of life, it is imperative not only to recognize OASIS at the time of delivery, but also to repair them appropriately.

A 2002 study by McLennan *et al.* [6] surveying more than 1100 fourth year Obstetrics and Gynecology (OBGYN) residents in the United States revealed that 60% of respondents had not received formal education about the repair of perineal lacerations and less than 30% of third degree lacerations were repaired under the supervision of an attending physician [6]. In 2010, a study conducted with residents from several residency programs on anal sphincter laceration repairs found that only 42.5% were proficient [7].

A survey of practicing obstetricians and obstetricians-in-training in the United Kingdom demonstrated that obstetricians-in-training were more likely to know the definition of an OASIS compared to practicing obstetricians [8].

To our knowledge, there has been no study in the United States that has explored the confidence of attending obstetricians and gynecologists at OASIS recognition and repair in the United States.

Attending obstetricians rarely receive formal surgical skills education after graduating residency, with the assumption that residency provided the appropriate skills training. Our aim was to assess confidence in recognition of OASIS and evaluate competence through a short knowledge based survey.

Materials and methods

We adapted a validated questionnaire previously used to assess residents' knowledge of OASIS to assess attending obstetricians' knowledge of anatomy and risk factors for OASIS. The questionnaire was divided into the following categories: demographics, repair of OASIS, anatomy and risk factors, and the existence of a protocol at each participant's hospital of practice. We structured the survey such that questions on confidence at OASIS recognition preceded the anatomy and risk factors questions.

The demographics category assessed years in practice, type of practice, whether participants practiced predominantly obstetrics, gynecology or practiced both equally.

The repair of OASIS category included questions on whether participants felt they were well-trained by their residency program

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to repair OASIS, confidence at recognition of OASIS, self-perceived competence to repair OASIS on a four-point likert scale. Additional questions included where OASIS repair occurs in their institution, what anesthesia is used if the patient does not have an epidural when OASIS occur, appropriate suture selection and steps of repair of OASIS.

The category on anatomy and risk factors asked objective questions on muscles involved in OASIS, risk factors for developing OASIS as well as post-operative considerations.

The questionnaire was reviewed by two board-certified faculty in Female Pelvic Medicine and Reconstructive Surgery and one Specialist in General Obstetrics and Gynecology for ease of read and for validity of the content.

The questionnaire was distributed by email during the months of January, through May of 2014 to practicing obstetricians at 7 major academic medical centers in a geographically diverse area including Maine, Massachusetts, Minnesota, Pennsylvania, Texas and Wisconsin through their departmental list serve. A reminder email was sent out asking the obstetricians to fill out the survey. The survey was filled out anonymously online using the Survey Monkey site.

Obstetricians and gynecologists who practice obstetrics were eligible to participate. Exclusion criteria included attending obstetricians who have completed training in Maternal Fetal Medicine or Female Pelvic Medicine or Reconstructive Surgery.

The study was approved by the institutional review board of Partners HealthCare. We used descriptive statistics to report our data. Fisher exact test and Kruskal-Wallis were used to compare demographic variables. All analyses were done with SAS 9.3 (SAS Institute, Cary, NC).

Results

We collected a total of 82 questionnaires (40.2% response rate) from obstetricians with a wide range of clinical experience (Table 1). Twenty-two (26.8%) and 59 (72%) survey respondents were respectively mostly confident or very confident and only one (1.2%) was somewhat confident at OASIS recognition. Only two (2.4%) survey respondents felt that their residency did not prepare them to recognize and perform repair of OASIS. Nine respondents (10.9%) felt somewhat prepared. The vast majority (86.6%) felt mostly or very prepared to recognize and repair OASIS.

We then asked attending obstetricians about their perceived competence at repairing OASIS. One felt no competence at all. Two (2.4%) felt somewhat competent, 32 (39.0%) felt mostly competent, and 47 (57.3%) felt very competent at OASIS repairs.

Location of surgical repair of OASIS and use of anesthesia if the patient did not have an epidural when she sustained an OASIS is reported in Table 2.

Forty-seven (57.3%) participants were able to identify muscles involved in a third degree laceration. Forty-eight (58.5%) respondents successfully identified the external anal sphincter from a schematic representation. Thirty-seven (45.1%) respondents were able to identify the function of the internal anal sphincter. Forty-five (54.9%) respondents identified the risk factors for OASIS correctly. Both questions concerning counseling of OASIS patients post-repair received a correct answer percentage of above 90.

There was no statistical difference in answering objective questions correctly with increasing years of practice. However, there was a

Table 1. Demographics.

	Number of participants (%)
Years in practice	
0-5	26 (31.7)
6-10	10 (12.2)
11-15	18 (22.0)
16-20	8 (9.8)
20+	20 (24.4)
Practice type	
Fellow	4 (4.9)
Faculty Practice	50 (61.0)
Private Practice	28 (34.2)
Area of Practice	
Predominantly Obstetrics	23 (28.1)
Predominantly Gynecology	14 (17.1)
Half obstetrics and half gynecology	45 (54.9)
State of practice	
MA	28 (34.2)
ME	10 (12.2)
MN	7 (8.5)
PA	17 (20.7)
TX	15 (18.3)
WI	5 (6.1)

Table 2. Location of repair and anesthesia used for OASIS repair.

Location of repair	
Delivery room	66 (80.5%)
Operating room	16 (19.5%)
Type of Anesthesia*	
Local	48 (58.5%)
Regional	30 (36.6%)
General	4 (4.9%)

* For patients who do not have regional anesthesia at the time of occurrence of OASIS

statistically significant difference in answering objective questions correctly by type of practice, that is faculty practice, private practice, or fellowship (p=0.04). Fellows were more likely to answer questions correctly than attending obstetricians. Overall performance on knowledge questions did not differ according to annual delivery volume (p=0.71).

Overall performance in objective questions differed by self-reported level of confidence in detecting higher order lacerations (p=0.006). The median score for providers who described themselves as “very confident” was 2/5 (interquartile range or IQR 2-3) on a scale of 0-5 with 0 representing no right answers and 5 representing all right answers. The median score for providers who described themselves as “mostly confident” was 3 (IQR 2-3). Only one provider described him/herself as “somewhat confident,” and received a perfect score on the questionnaire (5/5).

Overall performance in objective questions did not differ by self-reported competence in repair of higher order lacerations (p=0.09). Respondents who described themselves as “very competent” and “mostly competent” had a median scores of 2 (IQR 2-3). Only two individuals described themselves as “somewhat competent” and they scored 1 and 2. One individual described him/herself as “not competent” and received a perfect score on the questionnaire.

The last part of our survey asked participants whether they had a protocol for OASIS repair and if they would find one useful. Only one hospital out of the seven surveyed had a protocol for OASIS repair.

Eighty four percent of respondents would be interested in a protocol for OASIS repair at their hospital.

Discussion

In our survey, attending obstetrician's performance on knowledge questions ranged from 45.1% to 58.5%. If knowledge questions can be used as a proxy for proficiency at repair, our survey results show a performance by attending obstetricians to be similar to that of senior OBGYN residents, previously reported at 42.5% [9].

Our results are similar to those by Fernando *et al.* [8] who reported that obstetricians-in-training were more likely to correctly identify OASIS than consultant obstetricians. However, unlike the obstetricians surveyed in that study, the participants in our study are mostly satisfied with the training they received for OASIS repair [8].

The objective assessment from our survey reveals that a self-reported confidence at OASIS recognition does not necessarily correlate with knowledge of anatomy. In fact, from our results, low self-confidence at OASIS recognition is correlated with better performance on anatomy questions.

Our results should be taken with caution given the small number of survey respondents, particularly in the subcategory of fellows. Another limitation of our study is the relatively small number of hospitals represented in this study. Though the number was small, the diversity of locations of our respondents gives us some ability to conclude that the results are not due to a practice unique to one institution or geographic location.

Given the long term impact of OASIS on quality of life for the patients who sustain them, obstetricians need to be provided with better training for OASIS identification and repair. The vast majority of our survey respondents reported that they would find a protocol for OASIS

repair useful, and we propose the development of such a protocol to facilitate standardization of repair. Clear guidelines including where to perform a repair, the type of anesthesia, consideration of use of antibiotics, and repair technique to be used as has been done in the United Kingdom by the Royal College of Obstetricians and Gynecologists may be useful in standardizing repairs and in improving outcomes for women with OASIS. Further, multisite study of such protocols as well as ongoing faculty development efforts to assess the impact on patient outcomes is warranted for this low frequency, but potentially highly devastating, occurrence.

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