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Retrograde intrarenal surgery and percutaneous nephrolithotomy training in Turkey through the view of residents; ESRU Turkey questionnaire

Asistan gözüyle Türkiye'de retrograd intrarenal cerrahi ve perkütan nefrolitotomi eğitimi; ESRU Türkiye anketi

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ÖZET

Amaç: Çalışmamızda retrograd intrarenal cerrahi (RIRS)/perkütan nefrolitotomi (PCNL) konusunda Türk üroloji asistanlarının yeterlilikleri, tercih ettikleri eğitim yöntemleri ve uygulanmakta olan eğitim modelleri oluşturulan anket ile sorgulanmış ve sunulmuştur.

Gereç ve Yöntemler: Anketimizde eğitimde kullanılan yöntemler, eğitimin yeterliliği ve eğitim konusundaki beklentiler odak noktası olarak belirlendi. ESRU veritabanına kayıtlı olan toplamda 295 asistana gönderilen anketler toplamda 70 (%23) asistan tarafından yanıtlandı. Anketlerin oluşturulması ve dağıtımında SurveyMonkey kullanıldı.

Bulgular: Anketimize en fazla katılım Marmara Bölgesinden (%39,29), en düşük katılım ise Güneydoğu Anadolu Bölgesi'nden (%5,36) gerçekleşti. Anketimize katılan 1. 2. 3. 4. ve 5. yıl asistanlarının oranı sırasıyla %14, %23, %23, %12,7 ve %25 olarak belirlendi. Eğitim araştırma hastanesi ve üniversite hastanesi katılım oranları sırasıyla %46,77 ve %53,23 olarak saptandı. Asistanların %10,94'ünün PCNL için %14,06'sının da RIRS için kendilerini bu cerrahileri uygulamak konusunda yetersiz hissettikleri belirlendi. Asistanların vakalara katılım oranları ise RIRS ve PCNL için sırasıyla; primer cerrah olarak %56 ve %50 , primer asistan olarak %25 ve %42,19 , izleyici olarak %4 ve %7,81 şeklinde gözlendi.

Grubun %46,8'inin her iki cerrahi için de %15,63'ünün sadece PCNL için %15,63'ünün sadece RIRS için kurslara katılmak istediği saptandı. Kurslara katılabilen asistan oranının ise RIRS ve PCNL için sırasıyla %9,34 ve %1,56 olduğu görüldü. Her iki konuda da kurs alabilen asistanların oranı ise %4,69 olarak belirlendi. Grubun %40,63'ünün kursa katılamaması ile alakalı "klinik içi iş yoğunluğunu" %15,63'ünün kontenjanların yetersiz oluşunu, %18,75'inin asistanların yeterince desteklenmemesini, %14,06'sının kursların bulundukları bölgeye uzak oluşunu esas problem olarak gördüğü belirlendi.

Sonuç: PCNL ve RIRS Türkiye genelinde yaygın olarak uygulanan endoürolojik cerrahilerdir. Asistanların bu cerrahi prosedürler için eğitimde önemli gördüğü kursların yaygınlaştırılmasının ve asistanların bu konuda teşvik edilmesinin PCNL/RIRS eğitimi için yararlı olacağı düşünülmektedir.

Anahtar Kelimeler: *RIRS, PCNL, asistan, Türkiye, eğitim*

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This study was approved by the Ethics Committee of Niğde Ömer Halis Demir University (Approval Number: 2022/13 Date: January 27, 2022). All research was performed in accordance with relevant guidelines/regulations, and informed consent was obtained from all participants.

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ABSTRACT

Objective: Retrograde intra renal surgery (RIRS) and percutaneous nephrolithotomy (PCNL) are common endoscopic surgical procedures. In our study, qualification of the Turkish residents for RIRS/PCNL, the education techniques and models are evaluated by a national based survey.

Material and Methods: The techniques used in education, qualification of the education and expectations about the education were main focus. Questionnaire was sent to total of 295 residents who are registered to Turkish European Society of Residents in Urology (ESRU) database. A total of 70 (23%) urology residents answered. SurveyMonkey is used for composing and distribution of the surveys. The results were evaluated statistically.

Results: Total of 70 participants involved our survey and the rates of first, second, third, fourth, fifth years of residents were 14%, 23%, 23%, 12.7%, 25% respectively. The rates of the residents from training and research hospitals and university were 46.77% and 53.23% respectively. The participants were from all over the country and there were participants from all 7 geographical regions of Turkey. The rate of residents who felt they will become capable of doing RIRS after their residency education program was 63.08% and 36.92% of the residents expressed the RIRS training they took is not enough to perform this procedure after graduation.

Assistance and observation are used as the only training method for 39.2% and 49.2% of residents for RIRS and PCNL respectively. In addition, being a primary surgeon is used as a method of training by 55.38% and 50.7% of residents for RIRS and PCNL respectively. PCNL was performed by all the hospitals who were involved in the questionnaire. PCNL training course is needed by 15.38% of participants. The percentage of the residents who can' t perform RIRS in their hospital was 15.38%. RIRS training course was needed by 15.38% of participants.

Conclusion: RIRS and PCNL are common endoscopic surgical processes in Turkey. It's been thought to be useful to make the courses more common which residents feel important for their education and to make residents eager about PCNL/RIRS education.

Keywords: *RIRS, PCNL, resident, Turkey, education*

INTRODUCTION

Endoscopic surgeries are dramatically expanded and replacing the open operations. Open procedures are extinct nowadays because; all kinds of urological troubles could be cured easily by endoscopic methods (1). Treatment of urinary stones occupies 30% of the case volume in urology clinics (2). Stone treatments are leading type of surgeries in this area with lithotripsy surgeries such as ureteroscopy (URS), flexible ureteroscopy (f-URS) and percutaneous nephrolithotomy (PCNL). New technological developments improved the diagnostic and therapeutic implications of URS as well as the stone treatments. Haematuria diagnosis, taking biopsies, obstruction and small size lesion treatments are some of these usages. These techniques reduce morbidity of procedures and supply effective definitive therapies (3).

Training of residents has a vital importance to get used to being a competent urologist to perform this kind of surgery. However, residents' workload, claim of decreasing the complications, medico-legal issues and management of economic restrictions could be a potential obstruction during this education. Operative education has three different steps; first observe then assist and then operate. Depending on the complexity of a case, these three steps could take much more time than expected and it is the learning curve. The lack of tactile sensation, two-dimensional vision, hand-eye orientation and long-term learning curve could make the process difficult (4). Therefore, different training methods such as simulation and dry-lab are significantly helpful for the detailed learning procedures, patients' safety and increased surgical success. It marks the importance of standardization of resident training in endourological stone treatments (5).

Regarding all of these problems European Society of Residents in Urology (ESRU) Turkey designed a survey to picture the situation. The survey is established to evaluate Turkish residents training level and their opinion about their competency in PNL and f-URS. We regarded at two endpoints quantification and qualification way.

MATERIAL AND METHODS

In one month time frame a RIRS and PCNL surgery training questionnaire was performed by a total of 70 residents in Turkey. Questionnaires were created by ESRU Turkey and replied in Turkish by Turkish residents. Survey Monkey was used to create and spread the questionnaires and to evaluate all data. Study was approved by Nigde Omer Halis Demir University ethical committee (Approval Number:2022/13 Date: January 27, 2022).

The questionnaire was sent to 295 residents in Turkey and 70 of them responded to the questionnaires with their own will. Replying to all the questions was mandatory thanks to the Survey Monkey protocol. All the questionnaires were replied to on the internet and a survey was sent by e-mail twice in one-month of period by ESRU Turkey for increasing the number of participants.

The survey was formed by a total of 10 questions and it was possible to give more than one answer for some questions. The questionnaire was about RIRS/PCNL training and the factors that affect the training program and demographic data was also recorded. Descriptive statistics was used to analyze data.

RESULTS

Total of 70 participants involved our survey and the rates of first, second, third, fourth, fifth years of residents were 14%, 23%, 23%, 12.7%, 25% respectively. The rates of the residents from training and research hospitals and universities were 46.77% and 53.23% respectively. The participants were from all over the country and there were participants from all 7 geographical regions of Turkey.

Assistance and observing are used as the only training method for 39.2% of residents for RIRS. In addition, being a primary surgeon was used as a method of training by 55.38% of residents. The percentage of the residents who can' t perform RIRS in their hospital was 15.38%. RIRS training course was needed by 15.38% of participants.

The rate of residents who felt they will become capable of doing RIRS after their residency education program was 63.08% and 36.92% of the residents expressed the RIRS training they took is not enough to perform this procedure after graduation.

Assistance and observing are used as the only training method for 49.2% of residents for PCNL. In addition, being a primary surgeon is used as a method of training by 50.7% of residents. PCNL was performed by all the hospitals who were involved in the questionnaire. PCNL training course is needed by 15.38% of participants.

The rate of residents who feel they will become capable of doing PCNL after their residency education program was 69.23% and 30.77 % of the residents expressed the PCNL training is not enough to perform this procedure after graduated. The results are summarized in Table 1.

The main reason for the residents who cannot take training courses was clinical workload with 40.63%. Not being supported for participating in the training course (18.75%), insufficient quota (15.63%) and the long distance between training courses and place of residence 14.06% were the other reasons.

Table 1. Results of the Survey

Questions	RIRS	PCNL
Training Methods		
Asistance&Observation	39.2%	49.2%
Primary Surgeon	55.3%	50.7%
Residents needing a training course	15.3%	15.3%
Capability		
Capable of applying procedure after residency program	63%	69.2%
Residents unsatisfied from their training	36.9%	30.7%

DISCUSSION

Urologic surgery is continuously developing with technological advances and new approaches (6). Flexible and percutaneous techniques are the main endoscopic treatment methods for urinary stones. For this reason, training on PCNL and RIRS are important for residents.

According to literature, in 2007 and 2008, a questionnaire that includes opinions and exposures of the residents about urology training in terms of laparoscopic, robotic and endourological surgery in Canada(6). A total of 56 urology residents participated in this survey. The questionnaire consisted of 55 questions. Unlike our study, 37.5% of the 56 residents were performing percutaneous access primarily. Half of the residents planned to make their own percutaneous entry in the future. In this study, flexible ureteroscopy and PCNL were performed by 98.2 percent of final year residents . About 39.3% of participants performed >50 flexible ureteroscopic procedures in the last year and 33.9% of residents participated in >20 PCNL.

The training, general and financial conditions of European residents in urology were assessed in another study (7). As distinct from our research, the survey was conducted with 101 residents for experience of minor-major surgery and endourological surgeries. The majority of residents defined good experience in minor surgery (18.8% fair, 59.4% good and 19.8% excellent). Only two of them (2/101, 1.9%) said that their experience is poor. In the final year training of thirty-three residents (33/101, 32.7%) reported having poor or non-existent experience in major surgery. Similarly, surgical capability and surgical skills assessed in this study. 34/101 (33.7%) of residents reported their major surgical capability as fair and 34/101 (33.7%) of residents defined their surgical skills as good or excellent. 37/101 (36.3%) residents considered their experience as poor in endourology.

Two groups of surgeons were compared in terms of complication and stone-free rates for RIRS by Bernardelli et al. (8). The groups were composed by experienced (>400 patients) and in early phase of learning curve (100 patients) surgeons. Stone free rates were comparable between two groups but operative times and complication rates were lower for experienced surgeons. Learning curve was not described for RIRS in this study but experience can improve surgeons. For decreasing fluoroscopy time approximately 115 cases needed to be performed before reaching the plateau. According to Ziawei et al. >100 cases should be performed for reaching excellent stone-free rates (9).

In our study the operation counts of residents were not recorded. Due to this limitation it is not possible to mention the learning curve of Turkish residents. For example 69.23% of the residents feel confident about applying to PCNL after graduating but this data is subjective and objective criteria should be studied to define the learning curve. Proper resident training programs should be designed according to these learning curve.

CONCLUSION

Stone surgeries are one of the most common procedures for a urologists. Stone free rates, complication rates and operation times are the tripod of a successful stone surgery. Defining well planned education for PCNL and RIRS can help residents for reaching learning curve during or after residency.

Conflict of Interest: The authors declare to have no conflicts of interest.

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Ethical Approval: The study was approved by the Ethics Committe of Niğde Ömer Halis Demir University (Approval Number: 2022/13 Date: January 27, 2022). The study protocol conformed to the ethical guidelines of the Helsinki Declaration.

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