Analysis of International Practice Patterns Regarding Postvasectomy Fertility Options

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OBJECTIVE To review the management of postvasectomy fertility options by urologists with vs without andrology fellowship and compare the features of practice in the USA vs UK.

MATERIALS AND METHODS We conducted an audit of all American Urological Association—affiliated urologists regarding their practice in managing men requesting vasectomy reversal (VR). Standards of practice were assessed against 10 index parameters deemed, by 1 UK study, to reflect best practice. Fisher exact test was used to test the hypothesis that management of postvasectomy fertility options and practice of VR are no different when undertaken by urologists with vs without andrology training and no different in the USA vs UK.

RESULTS Three hundred twenty-five of 645 US respondents (50.4%) practiced VR vs 178 of 213 (83.6%) in the UK; only 11.9% in the US and 10% in the UK performed >25 and >15 (P <.0001) VR/year, respectively. Compared with the UK urologists the US urologists offered more detailed information on all fertility options and/or outcomes, used microsurgical techniques more often, but less frequently counseled couples together, and referred patients to specialist centers for in vitro fertilization with intracytoplasmic sperm injection (P <.0001-.05). Only 74 of the US and 61 of the UK urologists were fellowship-trained in andrology. Most non—fellowship-trained urologists, in both the countries, performed <5 VR/year and were, statistically, significantly less likely to counsel couples about all fertility options, be conversant in in vitro fertilization with intracytoplasmic sperm injection, provide individualized outcomes data, and use microsurgical techniques (P <.0001-.05).

CONCLUSION Significant differences exist in the standards of practice between both the US and UK urologists performing VR. Concordance with the indices of "best practice" improves with andrology training and increasing number of procedures performed. UROLOGY 83: 1065—1070, 2014.

Over 500,000 patients undergo vasectomy each year in the USA,[1] making it the most common nondiagnostic urologic procedure. The number of vasectomies performed for contraceptive purposes in the UK is also growing, having more than tripled, from 20,000[2] in 2005 to 65,000[3] in 2011. As such, vasectomy is becoming an increasingly popular family planning method,[4] with an estimated 6% of married couples worldwide relying on it for contraception.[5] However, approximately 6%-10% of vasectomized men subsequently have it reversed to allow further conception.[1,6,7]

Several options exist for men seeking to parent after previous vasectomy. Patients desiring biologic paternity[5] can opt for a vasectomy reversal (VR) or surgical sperm retrieval and in vitro fertilization with intracytoplasmic sperm injection (IVF/ICSI). Where biologic paternity is not possible or desired, intrauterine insemination with donated sperm or adoption could be considered. Of these options, VR is frequently favored by couples, as it allows them to conceive naturally and is most affordable and cost-effective,[8] especially when planning multiple offspring. However, its effectiveness in facilitating conception depends on a number of male and female factors[9] and may not always be the most suitable option for all couples.

Currently, the practice of VR is characterized by wide variation in preoperative counseling, surgical technique, and postoperative follow-up. As such, it was identified as a potential area for further research by the American Urological Association (AUA) Vasectomy Guidelines Committee.[10]

The nationwide survey into "*UK urologists' management of secondary azoospermia following previous vasectomy*"[9,11] sought to determine the contemporary management of couples seeking to parent after previous vasectomy and to assess the standards of practice against 8 key "index parameters", deemed to reflect "best practice" by the British Association of Urological Surgeons. The survey also compared the level of knowledge and performance of

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members of the British Association of Urological Surgeons Section of Andrology with those urologists without specified andrology or male infertility interest.

To date, no similar surveys have been carried out in the USA, and no comparisons have been made between urologic practice in the USA and the UK. The aim of this study was to review the US management of fertility options after previous vasectomy on the basis of the criteria used in the 2010 national survey of UK and compare the characteristics and standards of practice between the 2 countries.

METHODS

Ethical approval for this project was sought and attained through the Institutional Review Board at the Medical College of Wisconsin.

In October 2012, a questionnaire-based audit was undertaken of all active AUA-affiliated urologists regarding their individual practice in managing men requesting VR. A centrally generated E-mail with a link to SurveyMonkey (www.surveymonkey.com) was sent out, followed by several reminders. All replies received within a 2-week period of the initial survey were analyzed.

The questionnaire design was adapted from the 2010 nationwide survey into "*UK urologists' management of secondary azoospermia following previous vasectomy*" to allow later comparison with the UK data.[9,11] The respondents were asked a series of questions about the following aspects of their US practice: preoperative counseling of couples regarding their management options and expected outcomes, surgical techniques used, and the characteristics of practice and subspecialty interests of individual surgeons.

Included in the questionnaire were the following 10 key "index parameters", deemed to reflect "best practice" in the management of patients requesting VR:

- *Preference for seeing both partners together;*
- *Detailed discussion of all options for parenting;*
- *Being fully conversant with criteria for IVF/ICSI;*
- *Provision of individualized information about expected outcome;*
- *Annual caseload of >25 vasovasostomies (note: changed from >15 threshold used in the UK)*
- *Routine use of intraoperative magnification, loupes, or an operating microscope;*
- *Routine retrieval of sperm at the time of vasovasostomy;*
- Routine evaluation of intraoperative vas fluid;
- Performance of vasoepididymostomy when no sperms seen in the intraoperative vas fluid;
- Performance of microscopic 2-layer closure;

The italicized parameters were the exact same criteria as those used in the 2010 national survey of UK,[9,11] except for the number of VR performed per year, which was increased from >15 to >25 to reflect the greater incidence of VR in the USA. Three further parameters were added to reflect the recommendations of the Practice Committee of the AUA on the VR practice.[12]

These were used to assess the differential performance between the urologists with and without andrology fellowship training who counsel couples seeking to parent after previous vasectomy and perform VR. The performance of respondents against the same 10 indices and their type of practice (private group, private hospital, academic, or solo) were also examined according to the number of procedures undertaken per annum.

Fisher exact test was used to test the hypothesis that the management of fertility options after previous vasectomy and the practice of VR are no different when undertaken by urologists with and without andrology fellowship training and no different based on the number of procedures undertaken per annum.

The results of this study were then compared with the data from the national survey of UK,[9,11] so as to determine the differences in VR practice between the 2 countries and suggest improvements to the practice in each country on the basis of the results.

Finally, the respondents were invited to add any comments about the subject they wished to share.

RESULTS

A total of 7581 surveys were sent, and 645 responses were received (response rate 8.5%). Of those, 325 (50.4%) urologists practiced VR. Most, 54.1%, performed 1-5 VR/year; 20.4% performed 6-10, 13.5% carried out 11-25, with just 11.9% performing >25 per year. The results are displayed in Table 1.

With regards to preoperative counseling, most urologists (62.6%) preferred to counsel both partners together at the initial appointment, but only 9.7% insisted on doing so, and almost a quarter, 24.2%, had no preference. As many as 92.2% of urologists routinely discussed other options for parenting preoperatively, including IVF/ICSI (96.1%), donor intrauterine insemination (74.9%), and adoption (76.2%); however, 2.8% offered no other information apart from that on VR. In addition, 63.3% considered themselves fully conversant and aware of IVF treatment for postvasectomy fertility, 27.8% had a rough idea, whereas 5.4% were uncertain of who would be a good candidate for it; IVF was not available to 3.5%. Encouragingly, all urologists provided some preoperative counseling about the expected outcome of VR. However, only 36.7% quoted their own audited results, whereas most, 62.9%, relied on figures quoted from literature.

Of all the urologists who practiced VR at the time of this study, 49.4% performed vasovasostomy only, whereas 50.6% were able to convert from vasovasostomy to vasoepididymostomy when indicated. Three quarters (74.8%) of urologists routinely evaluated the intraoperative vas fluid for microscopic examination; where no sperm were seen, half (51.4%) performed vasoepididymostomy instead, 40.6% continued with vasovasostomy only, and 8% stopped and referred the patient elsewhere. Less than half performed synchronous sperm retrieval at the time of VR, either routinely (10.5%) or when specifically asked (37.1%).

The vast majority of urologists used intraoperative magnification when performing VR: 83.4% used an operating microscope, 16.3% used loupes, with just 1 urologist (0.3%) using no form of magnification. Microscopic 2-layer closure was the most popular method of anastomosing vas (51.4%), followed by modified