

POP-Q 2.0: its time has come!

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Abstract The Pelvic Organ Prolapse Quantification (POP-Q) system has been critical in the growth of the urogynecology field. It is time to revise the POPQ to make it simpler, more intuitive, more precise, less arbitrary, and more practical.

Keywords Pelvic organ prolapse · Pelvic organ prolapse quantification · POP-Q system

Urogynecology has become a well-recognized and highly respected field in the last two decades. Undoubtedly, this would not have happened without a uniform language that defines and categorizes pelvic floor defects. Introduction of the Pelvic Organ Prolapse Quantification (POP-Q) system in 1996 has been very critical in the maturation of our subspecialty [1]. This standard method has facilitated collaboration across the academic centers in large prospective clinical trials and helped us to establish an evidence-based foundation for urogynecology.

The POP-Q system did not receive an enthusiastic welcome at its launch. There was strong resistance to its adoption in the first few years. By 1999, it was used only in 13 % of studies [2]. It took a long time for it to gain widespread acceptance. In 2007, the POP-Q became the choice for staging in 82 % of articles published on pelvic organ prolapse (POP) [3]. Today, as it is almost assumed to be a requirement in any research activity, there is hardly any presentation at major scientific meetings that uses any grading system but the

POP-Q. Unquestionably, all of us who cater to women with pelvic floor disorders understand the POP-Q, even if a few may still be reluctant to use it in their clinical practice. Now that it has become established as the dominant classification system among urogynecologists, revision of the current system is due, in order to make it more universally adopted by those outside the realm of urogynecology. Let us have a close look at this system to see some of its commonly quoted shortcomings. The following list was compiled after a thorough review of previous reports that criticized the POP-Q as we know it today [4–7].

1. The POP-Q is complicated to teach: a system of letters is not intuitive [4]. It cannot be self-taught accurately. Residents do not understand the POP-Q until they start performing it under the guidance of a urogynecologist. What other grading system requires an instructor, or an additional teaching tool such as a video, a computer application, or a simulation model [8, 9]?
2. The POP-Q is too difficult to communicate to someone outside the subspecialty: the POP-Q system sounds as if it is a code, which may be intimidating to others. I am confident that we do not need exclusive jargon to gain respect after the remarkable science generated by our colleagues over the last two decades. When corresponding with a referring provider, whether from primary care or general gynecology, I felt obligated to translate the POP-Q into plain medical language. As I am not sure if they will understand “Ba at +2”, I always include “the most protruding part of the anterior vagina is 2 cm distal to the introitus upon Valsalva” as well. If we ultimately aim for adoption of this staging system by all obstetricians and gynecologists, and possibly by primary care providers, we must use a simplified, common sense, and self-explanatory system [6].

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3. The POP-Q has imprecise definitions leading to disagreements: even though the original paper introducing the POP-Q system provided explicit descriptions enhanced with figures, it left some room for interpretation [1]. Consequently, there have been different representations of the POP-Q points among the practitioners for certain POP cases. Our informal survey among leaders—including some who authored the original paper—in the field revealed that they don't always agree either. Commonly used POP-Q teaching applications for computers and mobile devices sponsored by several device companies (Fig. 1) also conflict with the teaching in many fellowship programs and the questions provided by the American Urogynecologic Society for preparation for the first board examination, which presumably represents the official view on the POP-Q system (Box 1).

Box 1

American Urogynecologic Society provided questions for preparation for the board examination. Question 283 was as follows:

“A 77-year-old female presents with a complaint of vaginal bulging. The POP-Q examination reveals: Aa: +3, Ba: +7, C: +7, D: +7, Ap: +3, Bp: +7, TVL: 8.5, GH: 4, PB: 2.5. Which of the following statements is TRUE?”

The correct answer was stage IV Pelvic Organ Prolapse. Please note that Ba, Bp, C, and D are all +7.

(Adapted from Female Pelvic Medicine and Reconstructive Surgery Question Bank, provided by the American Urogynecologic Society, at <http://www.classmarker.com/online-test>. Accessed on 15 June 2013)

4. The POP-Q system was “arbitrarily derived” and has limited clinical relevance [5]: there has to be something inherently wrong about a classification system that designates only 24 % of the general adult female population as completely normal (stage 0) when only about 6 % of community-dwelling women express that they have any symptoms attributable to this condition [10, 11]. It is true that the primary objective of a staging system is to provide a precise description of a medical condition for diagnosis and research. However, wouldn't it be more valuable if the POP-Q also offered a distinct management plan for each stage, just as the staging systems for cancer do? The POP-Q has not been very specific or useful as a management tool owing to the following:
- Stage I POP with weakened apical support may arguably be regarded as more significant than some cases of stage II POP. A woman with C, Ba, and Bp at -2 (stage I) may have a less desirable prognosis than someone else who has C at -7 , but one of Ba or Bp at -1 (stage II POP).
 - Not all cases of stage II POP are created equally. POP-Q stage II covers a wide spectrum of symptoms starting from none. It wouldn't be fair to worry an asymptomatic woman with good apical support, by breaking the news about her stage II POP when she barely brings her anterior vaginal wall to the hymenal ring with a strong Valsalva.
- Stage II POP with primarily apical involvement should be separated from the rest of stage II POP because it may present with different symptoms and require a different treatment approach. An apical suspension procedure per se may be all one needs to correct a predominantly apical stage II POP with no posterior wall involvement. In contrast, an anterior and/or posterior repair without any apical reconstruction may be sufficient to treat a woman with stage II POP with a well-supported apex.
 - Stage III could have been anatomically more specific. It encompasses anywhere from 1 cm distal to the hymenal ring to an almost full length vagina.
 - One may question the need for differentiation of stage IV as clinical management for advanced stage III and stage IV is usually the same.
 - GH makes a difference. An anterior prolapse may seem more prominent to a woman and even maybe a medical professional, if the genital hiatus is enlarged. In addition, the changes in the genital hiatus and perineal body measurements shown upon straining may be critical in the management approach [7].
5. The POP-Q does not address paravaginal defects: although paravaginal repairs have lost their popularity as studies have failed to show their superiority, it has always been noted as being a shortcoming of the system [4].
6. Location of point D should be clarified to enhance its utility. According to the original paper by Bump et al., point D “represents the posterior fornix (pouch of Douglas)” and “the level of attachment of the uterosacral ligaments to the proximal posterior cervix” [1]. However, as

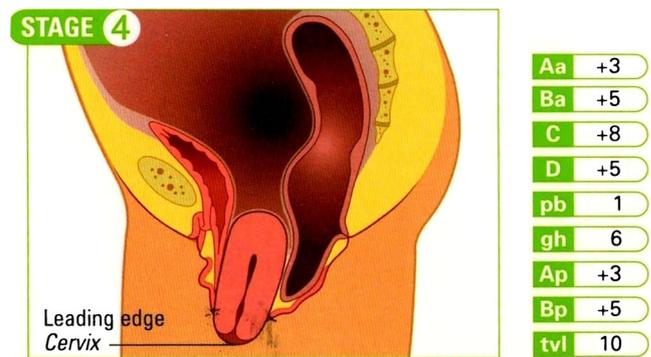


Fig. 1 Stage IV pelvic organ prolapse was represented as the following in booklets and computer applications that have been provided by medical device companies. Please note that C and D are different from Ba and Bp. (Illustrations ©2011 Tim Peters and Company, Inc. All rights reserved. Developed in consultation with Patrick Culligan, MD, Morristown, NJ, USA)

in the board examination preparation question shown in Box 1, point D has not always been designated that way in clinical practice. This approach may defeat the purpose of defining such a landmark, which may help to locate the correct site for posterior colpotomy during surgery and preoperative differentiation between cervical elongation and true apical prolapse.

7. The vaginal axis, which has traditionally been regarded as anatomically and clinically important, is not represented in the POP-Q system [4].

I am confident that those who have brought our field to this respectable stage can reconvene to make the necessary changes to the POP-Q system, but here are a few suggestions:

1. One way to simplify the POP-Q is to replace the letters with actual anatomical terms [4]. It is easy to confuse letter designations unless they are used regularly. When I use “urethrovesical junction” instead of “Aa” during a teaching session, we experience an “Aha moment” in the classroom. It sounds as if I switched from a foreign language to English.
2. Arbitrary and clinically less useful parts of the system may be reduced.
3. Scientifically demonstrated associations should be represented and enforced in the new POP-Q system.
4. Stage II POP should be divided into more meaningful categories addressing the effect of apical support and the genital hiatus on the symptoms and treatment.
5. Advanced stage III and stage IV POP should be merged.
6. To avoid disagreement later, a schematic representation for each stage of the revised system should be provided from the onset. An official stage-by-stage instructional tool can be created, validated, and made available online through the societies’ websites. Otherwise, the void may be typically filled by others that are not always accurate.

The first phase of the POP-Q mission is accomplished. It is time for the second phase to create a more universal language. The revision should make it simpler, intuitive, precise, less arbitrary, and more practical. As a result, the providers outside our subspecialty should feel comfortable with using the revised system. Straightforward management guidelines with

simple algorithms based on evidence and function should be easy to develop with this new and user-friendly POP-Q system.

The POP-Q 1.0 system has served its time with dignity. Now is the time to remove all of its bugs in our effort to design POP-Q 2.0.

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