

Urology questions from 19th September presentation.

1. When is bladder augmentation indicated? What does it involve (type of surgery)? What are its effects on WS patients / WS patients with a Mitrofanoff?

Bladder augmentation is indicated when severe bladder dysfunction occurs. This typically means when high pressures, poor compliance and reduced size mean that the bladder is reduced in size to less than 50% of expected size, pressures are high (over 25-30cm water), all other measures have failed to reduce the pressure.

Very often an augment is done with a Mitrofanoff procedure.

There are many complications to bladder augmentation that are well described in this paper (1). (See bottom of the page)

2. Is it more promising than sacral neuromodulation? Or can they both be done on the same patient? Would you consider neuromodulation on a WS patient at all?

I do not have much experience with neuromodulation. This is an uncommon procedure in the paediatric world.

I do have experience of patients with bladder outlet obstruction and normal neurology posterior urethral valves, and patients who have neuropathic problems such as spina bifida.

3. Is it typical for children with WS to have decreased sensation of needing to void, and then increased urinary urgency with exercise? Is GABA somehow involved here (change in inhibition of contractile functions in bladder)?

There may be something much simpler happening here: if you have a large poorly contractile bladder and you jump around, the weight of a full bladder will cause it to move and give sensation.

4. When Mr McCarthy speaks about neuromodulation further on, could you please explain what he says in simpler terms? I didn't really understand if he is in favour or against it. Our local urologist has suggested trying it for P.

I do not have any experience of neuromodulation in children. It may be an option but the research needs to be done, and published to show benefit.

5. from a Belgian participant - studies with stem cells have already been done?

These are experimental at present (2). (see bottom of the page)

6. How often can you have botox? – from an adult patient

This is very variable, especially in children. Some need it once, some it wears off after 6 months, some 3 months.

7. In the EEUU they are using Botulinic toxin and neuromodulation as a treatment. What do you think?

Botox is something I have used for 13 years. It is a great adjunct to therapy. Neuromodulation is still experimental in children, and not widely available (3) (see bottom of the page). In Rensing's series, this had a 20% failure rate over 2 years. That is high. Generally, surgeons would want to

have failure rates of 5% or less before performing an operation. There have to be good reasons to do something with a risk factor for failure this high. The balance of risk vs. benefit is something that surgeons and their patients have to explore before any operation.

8. I was told by a local Urologist, the electric stimulator didn't work after trying to place it in different parts but facing different areas also he said that the nerves of genetic patients are not situated as a normal person so it's difficult to use an electric stimulator. Should I go back to him for the stimulator treatment again and also please does the stimulator treatment work with optic atrophy to try to either bring some sight back or help to stop it from going weaker. A Dr from QEH, was saying to try the stimulator treatment before giving up but the local Urologist a few days ago said doesn't look like another attempt would make difference. I got nerve stimulator done for my bladder but it failed should I try again, adding to that does Wolfram syndrome affect how nerves work in the body which may alternate how the stimulator would work – from an adult patient

Apologies, but sacral neuromodulation is not a widespread modality in use in children. Research needs to be done, however from the report by Rensing et al there is a considerable failure rate with it (3) (see bottom of the page).

9. I am an adult who suffers from WS and have an over active bladder, is there anything I can do or any medications you would recommend to help me as I have to urgently urinate frequently and sometimes is becoming a problem when I go out. (This lady is also pregnant.)

The classic treatments for overactivity are anticholinergics (Oxybutynin, Tolterodine, Solifenacin,) and more recently Mirabegron. The safety of these in pregnancy is something that a urogynaecologist would need to advise you about.

10. Is there a way/chance to rehabilitate the function to pass the urine via normal way after more than 10 years relying on a catheter to pass urine.

She is now on:

Tolterodine to relax her bladder and incontinence & Desmopressin to control volume of urine

I have seen some children with massive bladders rehabilitated with regular drainage by catheters. Anticholinergics will slow down any contractility, so she is unlikely to spontaneously void on tolterodine. The children who improved tended to get better on 3-4 years. I think it is unlikely that after 10 years you will see recovery (but I would be delighted if there was!).

11. Any advice for Bowel Incontinence? (adult patient)

12. Is degeneration of the bladder likely to happen in most cases?

There is a risk for many, but I would like to see what the effects of simple bladder training regimes are in slowing the progression.

13. Is the overactive Bladder also a response to the sugar levels? (from an adult patient)

Almost certainly multifactorial.

14. Questions related to male WFS beyond just incontinence could neuropathy affect or cause erectile dysfunction? (adult patient).

I am afraid that erectile dysfunction is something paediatric urologists do not have any experience of.

References

1. Veeratterapillay R, Thorpe AC, Harding C. Augmentation cystoplasty: Contemporary indications, techniques and complications. *Indian J Urol IJU J Urol Soc India*. 2013;29(4):322–7.
2. Kim JH, Lee S-R, Song YS, Lee HJ. Stem Cell Therapy in Bladder Dysfunction: Where Are We? And Where Do We Have to Go? [Internet]. Vol. 2013, *BioMed Research International*. Hindawi; 2013 [cited 2020 Nov 23]. p. e930713. Available from: <https://www.hindawi.com/journals/bmri/2013/930713/>
3. Rensing AJ, Szymanski KM, Dunn S, King S, Cain MP, Whittam BM. Pediatric sacral nerve stimulator explanation due to complications or cure: a survival analysis. *J Pediatr Urol*. 2019 Feb 1;15(1):39.e1-39.e6.