Anomalies of the penis and scrotum in adults
Nugteren, Helena Madelinde

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General discussion and future perspectives
GENERAL DISCUSSION

Today, penile and scrotal abnormalities have become important as a medical topic. As we discussed in chapter 1, this is not only because they occur more frequently but because of a combination of and interaction between medical and especially cultural changes. Moreover, it was concluded that: “This high level of acceleration may also have some disadvantages; particularly in healthcare, hypes need to be prevented. For urologists, of course, it is important to remain in touch with innovative techniques both in the domain of human sexuality as well as in its problems. Given the primary medical ethical amendment, however, of doing no harm (primum non nocere), it is also important to take note of the limitations of these medical technical developments and of his/her profession. There will always be patients with penile abnormalities who are ‘surgically incurable,’ or who are better off visiting a sexologist or psychotherapist. In all cases iatrogenic damage, big or small, emotional or financial, must be prevented.”

It was the awareness of this delicate balance that brought us to our first overarching research question: Is surgery a good, preferably the best, treatment option in case of penile or scrotal deformity?

This main question was differentiated into three sub-questions that refer to three morphological qualities and accompanying diagnoses:

- **size**: the small penis
- **angle**: acute erection angle
- **expansion**: genital lymph edema.

Because treatment decisions are closely linked to a specific context, that is, diagnosis, our answer to the overarching question will be put in perspective here, using the international literature per anomaly.

Our second research aim was to investigate the association observed between Peyronie’s and Dupuytren’s disease. Both questions will be discussed here separately, and, afterwards, some implications or lessons learned – based on our limited study – will be discussed for the urosexology of tomorrow.
I. Is surgery a good, preferably the best, treatment option for:

The small penis

In chapters two and three we concluded that surgery is the only proven treatment for penile enlargement. This treatment is relatively simple and safe, and leads to the highest levels of patient satisfaction, if there was a correct indication, that is, it was a matter of functional complaints. This type of intervention is not suitable for patients with small penis syndrome or for patients who already achieve a penis length of no less than 7.5 cm in extension. These findings are in concordance with other, international findings. Li and colleagues noted that, despite an adequate penile length gain, overall only 35% of the patients were satisfied with the outcome after cutting the suspensory ligament. Satisfaction rates were low in patients with dysmorphophobia (27%), while higher in patients with an organic cause for their shortness of penis.1

This confirms the idea that some patients have unrealistic expectations, and any length gain would not be enough in these patients’ view. Furthermore, in men with functional complaints, surgical treatment is the last resort and should be implemented only when all other conservative measures have proved unsuccessful.

From a clinical perspective this means that two conditions must be met before surgery can be used as a good, possibly even the best treatment option:

- an indication of functional complaints
- an informed consent at a multidisciplinary level, counseling sessions with a psychologist-sexologist, and detailed explanation of the risks and complications of any operation.

Acute erection angle

In chapter four, we found that, when counseling has failed to provide relief, simple and safe surgical techniques to divide the penile suspensory ligament can yield adequate results in patients with an acute erection angle. In our case report, both males, who were treated for their acute erection angle, were satisfied with their surgical outcome.

Before operating, it is important that a couple with complaints of sexual inadequacy, which has resulted specifically from this abnormality, receive objective reassuring information about anatomical and physiological facts. Furthermore, healthcare professionals should offer sex-education information on more enhanced, functional penile positions for sexual intercourse in different positions.

Moreover, to the best of our knowledge, there is no comparative literature concerning the operation for this indication. That said, another anomaly of the erection angle, the lateral deviation of the erect straight penis (LDESP), has been recently described by Shaeer.2 This latter is described as “a penis that points laterally when erect, despite being straight, yet can be redirected forward by manual correction, without the use of force.” Surgery was performed in patients with LDESP, in cases where counseling had
failed and if the angle of the erect penis was easily manually corrected. During surgery an erection was induced and the skin on the contra lateral side of the LDESP was “pinched” to determine the extent of skin reduction required to correct the angle. The skin was then excised, and the incision was closed in two layers. The author reported a satisfaction rate of 73.3% after surgery.

**Genital lymph edema**

As reflected in our cases in chapter seven, a conservative approach is generally of little use for severe genital lymph edema. The study showed that excision of the affected tissue and closing the scrotal defects with skin from the posterior part of the scrotum using split skin led to satisfactory cosmetic and functional results. However, scrotal edema is rare outside of filariasis-endemic regions, and therefore any intervention should be done in clinics with sufficient experience.

Another surgical treatment for secondary male genital lymph edema consists of a physiologic operation, in which new channels are created to increase the transport capacity of lymphatic fluid. Up until now, this treatment has not been very successful, and control of the edema has been considered difficult to maintain over a long period. However, the development of super-microsurgery makes it possible to create anastomosis of very small vessels. Using this microscopic anastomosis technique, new methods for lymphaticovenular anastomosis (LVA) are being developed. In LVA surgery, a lymphatic vessel is anastomosed to a venule or small vein in an intima-to-intima coaptation manner so as to bypass congested lymph into venous circulation. However, LVA has a potential risk of thrombosis of the anastomosis, because venous blood can be refluxed into the anastomosis site. Because of this thrombosis, Yamamoto and Koshima describe a technique in which a non-obstructed lymphatic vessel is used as a recipient vessel for anastomosis of an obstructed lymphatic vessel. They describe a case of a male with a cellulite-induced lymph edema of his lower leg, who was treated with super-microsurgical superficial-to-deep lymphaticovenular anastomosis (LLA). At six months post-operative, there was a slight volume reduction in the affected lower leg. However, the superficial-to-deep LLA method can only be used in limited cases. It cannot, for example, be used for the treatment of secondary lymph edema after lymph node dissection or radiation, because both the superficial and the deep lymphatic systems are obstructed.

Theoretically, lymphovenous or lymphaticovenular micro-anastomoses are promising yet technically complex. Application to scrotal lymph edema has not yet been defined, and further studies are required before widespread application of these treatments.
II. Is there an association between Dupuytren’s and Peyronie’s disease?

In order to evaluate the coexistence of DD in patients with PD, 415 consecutive patients were examined in our study described in chapter six. This study is the largest series, which has examined the coexistence of DD in patients with PD. Our conclusion was that, in 22%, both diseases were present.

These findings are in concordance with those of Qian and colleagues, who demonstrated that the pattern of alterations in the expression of certain gene families in PD and DD was similar. This suggests that they share a common pathophysiology. A recent genome-wide association study performed by Dolmans and colleagues revealed nine susceptibility loci for DD. Another research by this author with 111 PD patients showed that the WNT2 is a susceptibility locus for PD; this is one of the loci associated with DD. The WNT2 association was even more significant after removal of 15 patients with co-morbid DD, which proves that the association is caused by PD and not by DD. This study provides evidence for a partly shared genetic susceptibility between PD and DD.

The recognition of Peyronie’s disease is growing, and there is an increase in the various treatments currently being used for Dupuytren’s disease. The association between these two disorders will most likely gain in importance, as they may be amenable to the same therapeutic regimens.
CONCLUSIONS ON A META-LEVEL

In this thesis, the results of clinical studies, case reports, and literature studies on the diagnostics and treatment of anatomical abnormalities of the male genitals have been described. We have tried to provide an answer to questions such as: which anatomical and scrotal abnormalities are relatively common, and whether, in that case, operating is a responsible or even preferable approach. In short, we have tried to survey a part of the urological field, while keeping in mind the medical ideal of maximum rapprochement while maintaining distance. On a meta-level this leads to some interesting and cross-curricular insights:

1. Basically, urology can contribute to the quality of the sexual life of patients with deformed genitalia. It seems that the ethical principles of doing no harm (*primum non nocere*) is sufficiently met.

2. The decision as to whether this contribution is beneficent, however, is only partly a urological matter. This kind of decision belongs to the domain of co-creation with patients and professional colleagues. After all, this is a situation in which:
   - there are many different stakeholders, such as the patient, partner, practitioner, and society;
   - different angles are conceivable, such as medical, ethical, aesthetic, and financial; and there are always pros and cons, since no surgery is, after all, “for free,” nor does it escape the placebo and/or nocebo effect.
FUTURE PERSPECTIVES

What this thesis makes clear is that urological sexology is not an isolated phenomenon, an island in the urological, surgical, or even medical sea. Our conclusions, that dysmorphic penile problems can be resolved by surgery and that the side effects are acceptable, do not mean that we have found a panacea for all these kinds of problems. The fact of the matter is that our reassuring conclusions are only the starting point in a far wider healthcare discussion. In order to structure this discussion, the model for multi-level implementation suggested by Joore’s thesis might prove helpful.13

Level 1
Urological surgery as a technical solution; the criteria are safety and quality in terms of technical feasibility, functional results, and acceptable side effects, preferably seen in the light of an evidence base.

Level 2
The practical use: the criteria are practicality for the patients (duration, understandability/meaning, burden) and for the professionals (surgeon, nurses, etc., in terms of work satisfaction, time consumption on an individual basis, etc.).

Level 3
Managerial use by team leaders and coordinators; the criteria are not only quality of care but also cost/benefit ratio on a group level, functionality in multi-disciplinary collaboration, etc.

Level 4
Governance level: the criteria are consistency with organizational values; in other words, does the whole chain (operation, treatment, etc.) help us reach our aims as a medical center?

The caesura between 1 and 2 versus 3 and 4 reflects the current discussion in healthcare as to whether to focus on the content of the managerial and/or political dimensions. Here the roles of “practical physicians and nurses” meet the roles of “managerial team leaders.” From a bio-psycho-social perspective, these dimensions can be distinguished yet not separated. It is, therefore, important to note that, until now, research has only focused on “respondents” from the first two levels. Future research should certainly also include team leaders (level 3), who have their own opinions about the use of surgeons and nurses (level 2), let alone representatives of the board of directors of the hospital involved, who have to negotiate with the financial-political system about the scale of healthcare provided.
All in all, it is the combination of all these aspects that makes a multidisciplinary (including healthcare management), stepped-care approach preferable, one in which:

1. On a multidisciplinary level, where which intervention is medically-technically feasible must be checked, along with whether there are multiple options: What are the pros and cons of the interventions, and what are their far-reaching consequences? Questions that can be asked during this discussion are:
   a) What is the exact dilemma? Is there, for example, an indication for invasive urological intervention, or is there dysmorphologic suffering?
   b) What basic moral principal is at stake: 1) autonomy, 2) beneficence, 3) non-maleficence (*primum non nocere*), or 4) justice?

2. Since there are differences within but also between treatments, all these points need to be worked out per moral principal, in other words, what are the pros and cons?

3. This should then be worked out between the principals themselves. For example, one of the consequences of not honoring the question that the patient has is that his autonomy might be harmed. This stepped-care approach makes clear which criteria collide, and one can then set about prioritizing.

4. The outcome of this consideration – of course, within legal and social frameworks – is the stepping-stone to a dialogue between patient and practitioner.

5. Doctor and patient should arrive at a shared plan of action. When there is a simple anomaly, which is easy to correct, the shared plan of action can take place in the form of an informed consent. The doctor will propose a treatment, and the patient decides if he will undergo this treatment. However, more often than not there will be a more complicated dilemma, and then “shared decision-making” is the standard. The urologist will go through all the options together with the patient, examining which treatment is a realistic solution to his problems, and if its consequences are in proportion to the expected result.

6. At the same time, a continuous dialogue should be held with representatives of the management layer or preferably even higher, the board of directors. In order to guarantee safety and quality in the short term, this kind of surgery should be well organized. In the long term, the question of whether this kind of surgery has added value to the hospital should be discussed. Only if this is also the case, does urogenital surgery of penile or scrotal dismorphic problems have a sound future.

In short, the urological-surgical act should always be contextually accessed; a rigid never/always approach or a simple prescription of medicine has no place here.
REFERENCES


