

EDITORIAL

Undescended Testis Guideline— Is it Being Implemented in Practice?

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An editorial accompanying the article “The timing of surgery for undescended testis – a retrospective multicenter analysis,” by Hrivatakis et al., in this issue of *Deutsches Ärzteblatt International*

The creation of guidelines is one thing, and their implementation in everyday clinical practice is quite another (1, 2). The first guideline of the German Society of Pediatric Surgery on the treatment of undescended testis was published in 1999, remained current for a decade, and appeared in a newly revised version in January 2009 on the homepage of the Association of the Scientific Medical Societies in Germany (*Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften*, AWMF). The main change regarding treatment in the updated guideline was that the recommended time for surgical treatment (orchidopexy) was changed from before the affected child’s second birthday to before his first birthday. The declared objective of treatment was the prevention of secondary testicular changes by early repositioning of the testis in the scrotum, in order to lower the risk of subfertility and testicular cancer in adulthood (3, 4). Newly available scientific knowledge had already led, in other countries, to a resetting of the optimal time for treatment to the child’s first year of life (5). In April 2013, a further (and currently valid) revision of this guideline appeared on the AWMF homepage, containing no further major changes. In this issue of *Deutsches Ärzteblatt International*, Hrivatakis et al. address the clinically important question of how well the guideline is now being implemented (6).

The frequency of undescended testis

Undescended testis is the most common pediatric condition requiring surgical correction in the Western world. It is a risk factor for testicular cancer and for impaired fertility. As many as 5% of boys born at term have a primary undescended testis; among boys born prematurely, the condition is reportedly present in up to 30% (7). About 10% of the affected boys have bilateral undescended testis. Spontaneous descent of the undescended testis is seen in 70% of cases in the first six months of life (8) but becomes unlikely after the first six months of life have passed, with the result that 1% to 1.5% of boys overall are still affected. This amounts to about 3500 boys in Germany each year (a conservative estimate based on an annual figure of about 680 000 births). In addition to primary (congenital) undescended testis, there is also secondary undescended testis, which, according to some studies, is three times as

common (9). The importance of secondary undescended testis is apparently still underappreciated, which might be an explanation for the surprisingly high rate of late orchidopexies.

The timing of surgery

A look at representative studies from other countries makes clear that the goal of having orchidopexies performed before the affected boys reach their first birthday is an ambitious one. There is, as yet, no good explanation for the fact that boys with undescended testis are usually referred for surgery much later than they should be; multiple attempts have been made recently to explain the “enigma” of late orchidopexy (9, 10). Until now, the mean age at the time of surgery has been from 2 to 6 years, and it is clear that an effort must be made to lower this figure.

Hrivatakis et al. retrospectively studied operations for undescended testis in pediatric surgical treatment facilities in the German state of Baden-Württemberg in the years 2009–2012, during which the revised treatment recommendations were known and should have been implemented. Of 1850 boys with primary undescended testis, 81% were operated on after their first birthday, against the recommendation of the guideline. Clearly, the declared target was missed by a wide margin, and this is unacceptable.

Not all of the published studies distinguished primary from secondary undescended testis, so there is less than total clarity about the actual timing of surgery for primary undescended testis. One cannot, however, attribute the finding of late surgery in such a large majority of cases to this cause alone.

In a retrospective analysis of 3587 boys with undescended testis who underwent surgery in 13 hospitals across Germany in the years 2003–2012, the authors of this editorial found that, before the revised guideline appeared, 79% of the boys were more than 2 years old and 45% were over 5 years old at the time of surgery. Once the revised guideline had been published and a certain amount of time had elapsed for it to become widely known, i.e., from the year 2010 onward, these two figures became lower, but only slightly: they went down to 72% and 38%, respectively. The trend is in the right direction, yet the result remains unsatisfactory. Our study, however, was unable to distinguish between cases of primary and secondary undescended testis.

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Interestingly, more boys underwent timely surgery, as recommended in the guideline, in hospitals with a pediatric surgery service than in those without any recognized expertise in pediatric surgery, both before the revision of the guidelines (29% vs. 17%) and after it (17% vs. 3%).

The question remains why surgery is still being performed so much later than recommended in the guideline, which, after all, reflects a consensus among the participating specialty societies. Do our medical colleagues really still need to be informed about what the guidelines say, or can it be that the treating physicians intentionally delay their referrals for orchidopexy because of their own reservations about early surgery? Are parents afraid of anesthesia and/or surgery in their children under the age of 1 year, or is undescended testis often overlooked in clinical practice? These questions are hard to answer and call for further, ongoing evaluation.

In a nationwide survey that we performed among German pediatricians in private practice, more than half were of the opinion that orchidopexy is generally performed too late. 45% of the physicians surveyed, however, were unaware of any problem in this regard, and 38% could not cite the recommendation that the operation is supposed to be performed before the child's first birthday.

A topic for further research

The published studies and the current data reveal that the treatment of boys with undescended testis needs to be improved. Although there is a welcome trend toward more frequent performance of surgery before the patient's first birthday, as recommended in the guideline, this is still being done far too rarely. Hrivatakis et al. have impressively confirmed that this is the case in southern Germany as well. Physicians and parents must be continually informed about the advantages of early orchidopexy so that these patients' prognosis can be improved with regard to both fertility and the risk of malignancy. Further, prospective studies are needed to pursue the findings of this study onward into the future, provide objective facts, and distinguish the frequency and timing of presentation of secondary undescended testis from those of primary (congenital) undescended testis.

It is also important that testicular examinations should be continually, actively documented in the

child's early years as a part of their routine pediatric check-ups, and that parents should fully understand why this is being done.

Conflict of interest statement

The authors state that they have no conflict of interest.

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REFERENCES

1. Kopp IB: Perspectives in guideline development and implementation in Germany. *Z Rheumatol* 2010; 69: 298–304.
2. Karbach U, Schubert I, Hagemeyer J, Ernstmann N, Pfaff H, Höpp HW: Physicians' knowledge of and compliance with guidelines: An exploratory study in cardiovascular diseases. *Dtsch Arztebl Int* 2011; 108: 61–9.
3. Murphy F, Paran TS, Puri P: Orchidopexy and its impact on fertility. *Pediatr Surg Int* 2007; 23: 625–32.
4. Hutson JM, Hasthorpe S, Heyns CF: Anatomical and functional aspects of testicular descent and cryptorchidism. *Endocr Rev* 1997; 18: 259–80.
5. Ritzen EM: Undescended testes: a consensus on management. *Eur J Endocrinol* 2008; 159 (Suppl 1): 87–90.
6. Hrivatakis G, Astfalk W, Schmidt A, Hartwig A, Kugler T, Heim T, Clausner A, Frunder A, Weber H, Loff S, Fuchs J, Ellerkamp V: The timing of surgery for undescended testis—a retrospective multicenter analysis. *Dtsch Arztebl Int* 2014; 111: 649–57.
7. Virtanen HE, Bjerknes R, Cortes D, et al: Cryptorchidism: classification, prevalence and long-term consequences. *Acta Paediatr* 2007; 96: 611–6.
8. Wenzler DL, Bloom DA, Park JM: What is the rate of spontaneous testicular descent in infants with cryptorchidism? *J Urol* 2004; 171: 849–51.
9. Hack WW, Meijer RW, Van Der Voort-Doedens LM, Bos SD, De Kok ME: Previous testicular position in boys referred for an undescended testis: further explanation of the late orchidopexy enigma? *BJU Int* 2003; 92: 293–6.
10. Lamah M, McCaughey ES, Finlay FO, Burge DM: The ascending testis: is late orchidopexy due to failure of screening or late ascent? *Pediatr Surg Int* 2001; 17: 421–3.

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