

Report for NFOG

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Children- and Adolescent Gynecology Intensive Course, part I October 14-16, 2010 Munich, University-Hospital München-Grosshadern

Nine years ago I moved from Germany to Sweden where I had accepted a job at the Women's Clinic in Jönköping. Since then I have become a specialist in obstetrics and gynecology. My recurrent consultations at the local youth clinic (Ungdomsmottagning) as well as my interest in questions concerning sexual violence against women and children lead me to search for ways to increase my knowledge in this field. As a native speaker it appeared natural to me to look for even for German literature and courses in German-speaking countries.

In October 2010, 14-16, I had the opportunity to travel to the beautiful city of Munich to attend a interdisciplinary three days course in "Children and adolescent gynecology". The course was located at the University Hospital in München –Grosshadern. The participants were mainly gynecologists but also pediatricians and an urologist from Germany, Switzerland and Austria.

The course was organized by the *German Working group for Children and Adolescent Gynecology (Arbeitsgemeinschaft Kinder- und Jugendgynäkologie)*, which is an interdisciplinary team of interested and further specialized gynecologists and pediatricians. The working group is part of the *Federation Internationale de Gynecologie Infantile et Juvenile (FIGIJ)* which was founded in 1971. The German working group exists since 1978. As such it has been included in the *German Society for Gynecology and Obstetrics (DGGG)* and also in the *German Society for Pediatrics*. One of the working groups' aspirations is to build up a network of physicians with competence within children- and adolescent gynecology, to refer patients to. Since 2006 the working group arranges courses in order to increase the competence in this field. A historical particularity is the change that occurred when Germany was reunited in 1990. Thanks to the reunion the Working group could benefit from the experience and knowledge that the colleagues in the German Democratic Republic had gained since as early as 1967.

The course covered many of the problems that can be faced when meeting a female child or teenager for a gynecological consultation:

1. Examination techniques
2. Ultrasound
3. Endocrinological assessment
4. Genital bleeding during childhood
5. Bleeding disorders
6. Genital malformations
7. Gynecological tumors, dysplasia, HPV

8. Precocious puberty
9. Hyperandrogenemia, PCOS
10. Turner's syndrome
11. Sexual violence
12. Disorders in sex development
13. Disorders of breast development
14. Contraception
15. Legal aspects

The course was structured in such a way that four lectures were held before lunch and three seminars in the afternoon. This allowed the participants to elaborate the issues from the lectures on a more practical level by means of case reports, discussions and practical training (ultrasound). The course was resumed after a multiple choice test. During the course catering was supplied outside the lecture rooms so that there were many opportunities for discussions among participants and docents.

Summary of the course content

1. Examination technique

Gynecologists in Germany often meet the young patient after she has been referred by another physician. So the lecturer stressed that it is important to keep in mind that the girl's parent can have heard different recommendations and opinions and that the consultation may be affected by the parent's concern and feeling of uneasiness. Likewise are many gynecologists unfamiliar with young children as patients. Thus it was suggested to inform the parents about the examination before the consultation, to avoid long waiting and to choose a suitable person for assistance. During the consultation it was important to address the child and to take it seriously, not to rush, to explain everything thoroughly, never to use force and never to hold the patient. Concerning the examination it was recommended to examine the entire child to get a picture of the stage of development (Tanner scales) as well as the physical condition. The steps of the examination would of course be determined by the medical problem. For the gynecological examination two positions were proposed: the frog-position and the knee-breast position. For the inspection of the vulva and lower part of the vagina in frog-position the labia majora should be carefully separated and slightly drawn in caudal direction. In knee-breast position the gluteal muscles should be carefully rotated in dorsal direction. In case of bloody or malodorous discharge vaginoscopy should be performed. If a foreign body was suspected in the vagina or if an intra-abdominal tumor was suspected a rectal palpation would be indicated. As a complement the abdominal ultrasound was proposed. Of course blood-samples and vaginal smear test could be necessary as well. However according to the German colleagues the cases where a vaginoscopy is indispensable are rather seldom.

2. Ultrasound

The requirements for evaluating the internal genitals of female children with abdominal ultrasound were presented including the position of the patient and the sectional planes. It was pointed out that it can be a problem for young children to have a filled urinary bladder, which is important for the examination. The recapitulation of the anatomical changes of the internal genital during childhood facilitated the

interpretation of the ultrasound pictures that were presented during the lecture. In addition to the uterus and the cervix even the upper two thirds of the vagina could be pictured as well as the ovaries. Important findings such as cysts of the ovaries, torsion and uterus-malformations were elaborated. It was interesting to learn from an article the lecturer presented the frequency for clinical relevant neonatal ovary cysts was estimated to 1:2500 births. A flowchart was presented with the suggested management of ovary cysts in children. Very helpful was the amount of pictures that were shown and explained as well as the possibility to test abdominal ultrasound together with the lecturer on children after the seminary.

3. Endocrinological assessment

During this lecture the hypothalamic-pituitary-gonadal-axis was recapitulated and the most important aspects of hormone assessment including hormone tests were discussed in consideration of different disorders such as hypogonadism, precocious puberty, congenital adrenal hyperplasia, hirsutism and hyperprolactinemia. Peculiarities concerning laboratories in Germany were pointed out.

4. Genital bleeding in childhood

It was emphasized that a genital bleeding in childhood when hormone levels are low is always pathologic. According to the lecturer the most frequent reason for genital bleeding is vulvovaginitis. Bleedings can also be caused by injuries, foreign bodies in the vagina, temporary stimulation with estrogens, urethral prolapse, hemorrhoids (very rare in children), lichen sclerosus and tumors. However in many cases the reason could not be found. The lecturer deduced her propositions from observations in her own practice where she evaluated the etiology of genital bleedings in 310 prepubertal girls. Seldom sparse bloody discharge can be seen in 4-6 weeks old baby girls. The bleeding is as a consequence of withdrawal of the maternal estrogen and ceases spontaneously at the latest after 3-5 days ("Halban Reaktion" in German). The therapy of vulvovaginitis in children depends on the result of the vaginal smear.

In case of genital injuries the possibility of sexual abuse should be kept in mind. If injuries in the vulva are presented it might be appropriate to exclude even vaginal injuries. The therapy depends on the extent of the injury.

Even condyloma acuminata could be found as bleeding source and in these cases careful investigation of the way of contamination was recommended as there might be a history of sexual abuse. However according to the lecturer condyloma can be transmitted even by non-sexual contacts within a family. Given the high rate of spontaneous remissions treatment with laser was only recommended in special cases.

When discussing lichen sclerosus as a source of bleeding from the vulva it was pointed out that especially in children it might be confused with other skin disorders such as eczema. Taking a biopsy though was not considered necessary; as it should be possible to diagnose lichen by inspection. Foreign bodies in the vagina usually cause a persistent malodorous bloody discharge. They can be detected by rectal palpation, however vaginoscopy is to be preferred and mostly unavoidable for the extraction of the foreign body. During the intervention infusion of saline in the vagina could be helpful.

Temporary influence of estrogen can be the cause of a vaginal bleedings. In these cases extensive evaluation including ultrasound is necessary to exclude disorders such as tumors or precocious puberty. Extragenital causes could be suspected if a vaginal bleeding had been ruled out by vaginoscopy. For inspection of the urethra (urethra caruncle) and the anus (hemorrhoids) the use of a kolposcope is recommended. Very rarely tumors such as hemangioma or sarcoma botryoides can be found in children with vaginal bleedings. In these cases the diagnosis is made after biopsy and further diagnostic measures as well as therapy planning should be performed by specialists. When no acute bleeding could be seen during the consultation the lecturer recommended limiting the examination to history and inspection of the external genital and the extragenital areas. Further examination should be done when acute bleeding would reappear. The lecturer pointed out that it was important not to miss signs of puberty according to the Tanner scale, as the genital bleeding could have been caused by precocious puberty.

5. Bleeding disorders

The basic steps of the assessment of bleeding disorders were presented, including history, inspection including Tanner scale, weight, height, examination of the external genital, bimanual rectal or vaginal palpation and abdominal or vaginal ultrasound for the evaluation of the inner genital. The distinction between a hymen under and without the influence of estrogens was shown in pictures. The dysfunctions of the hypothalamic-pituitary gland-ovarian axis were discussed. Especially menorrhagia in adolescents was scrutinized. Patho-physiological details were elaborated. For polymenorrhea, hypermenorrhea and dysmenorrhea combined oral contraception (COC) with a pill-free week per month or per three months or cyclical progestin was recommended as therapy. For oligomenorrhea cyclical progestin and COC with a pill-free week and for menorrhagia cyclical progestin was recommended. During the seminars the subject was discussed by means of cases.

6. Genital malformations

Epidemiology, etiology and embryology of genital malformations were presented as well as the VCUAM classification scheme as it is used by the German society for Gynecology and Obstetrics. However it became clear that the VCUAM has not become widespread yet and its use is not easy. Quite interesting were the variations of malformations of the vulva, such as failure of the midline fusion, asymmetry of the labia, hypertrophy of the labia, labial fusion, labia-synechia and hymen malformations. Given the similarity to defects after sexual abuse it was important to learn about the failure of midline fusion that can result in mucosal exposure anywhere on a line from the fossa navicularis to anus. This finding typically resolves at puberty. The difficult delimitation of normal variations of the labia to hypertrophic labia was discussed as well as the problem to decide when to do a surgical reduction. Pictures of were shown, among them healing by secondary intention. The fusion of the labia in baby girls that could be treated with the local application of estrogen was shown as well as the fusion of the labia in congenital adrenal hyperplasia (CAH) patients that had to be corrected surgically. The differentiation between hymen altus and hymen atresia was shown. Pictures with different variations of vaginal septum were presented as well as all types of agenesis of vagina, cervix and uterus, with focus on the

Müllerian agenesis and the androgen insensitivity syndrome (complete: CAIS, or partial: PAIS). Congenital abnormalities resulting from failure of resorption of the median septum (septate uterus), failure of fusion (didelphys and bicornuate uterus) and failure to form (absence of uterus or unicornuate uterus) were elaborate. Interesting were cases with residual uterushorns without communication to the vagina that could present as painful abdominal tumors after menarche.

7. Gynecological tumors in childhood and adolescence

a. Vulva

Pseudo-tumors

Benign vulva (pseudo-) tumors such as hymen-polyp, urethral caruncle, clitoral lymphangioma and hernia were discussed. In the vagina Gartner's duct cysts were differentiated from the rhabdomyosarcoma (sarcoma botryoides) which according to the lecturer counts for 4-8 percent of all malign tumors in childhood and is in 20% of the cases located in the urogenital tract. A rare case of vaginal pheochromocytoma was presented. As especially the rhabdomyosarcoma becomes symptomatic by a vaginal bleeding, the participants were reminded of the differential diagnoses for bleeding in childhood and it was stressed that bleedings that are resistant to therapy have to be examined with vaginocopy. The emphasis was put on recognizing these alterations, not on the therapy which is often the domain of pediatric surgery. However it was suggested that alterations as urethral caruncle, hymenal polyp, lymphangioma and Gartner's duct cyst may not have to be treated at all.

b. Cervix and uterus

In contrast to adults the tumors of cervix and uterus are predominantly sarcomas and mixed mesodermal tumors of the uterus. Endometrial carcinomas are rare. However they can be found associated to hereditary nonpolyposis colorectal cancer (HNPCC). Again the vaginoscopy was highly recommended to detect the bleeding source of vaginal bleeding in children. Cervical cancer respective HPV- associated cervical dysplasia were discussed in a separate lecture. There the participants were given an overview on the actual knowledge of development of cervical dysplasia through infection with HPV, especially type 16 and 18. The results of the studies FUTURE I and II as well as PATRICIA were summarized. The ongoing discussion in Germany about the implementation of vaccination measures with Cervarix and Gardasil was reflected. Even though considered as important by the lecturer and many participants at present there are no exhaustive vaccination measures in Germany such as Rubella vaccination in school. Since august 2009 the German Standing Vaccination Committee (STIKO) recommends the vaccination of girls between the age of 12-17 and the preferably three vaccinations should be completed before the first cohabitation.

c. Malformations

Malformations of the uterus that might lead one to suspect a tumor were especially discussed during the lecture on ultrasound. Here findings such as uterus bicornis, didelphys, were shown as well as neoplasms.

d. Ovaries

Concerning tumors of the ovaries the same alterations that can be found in adult woman can also be found in children, but benign cysts and mature teratomas are the most common according to the lecturer. The majority of ovarian cysts are however not clinically significant. Larger cysts (>2 cm) require an evaluation for hormonal stimulation because the low levels of estradiol and gonadotropin usually prevent full follicular development. Most cysts resolve without intervention though risk for torsion in larger cysts has to be kept in mind. For the prevention of recurring cysts in adolescents the treatment with COC was recommended. Other tumors that can be seen in children are mature teratomas and endometriomas in adolescents. The comparison of ultrasound pictures showed that by merely looking at the ultrasound picture a hematocolpos could be easily taken for an adnexal mass. In contrast to adults where most ovarian malignancies are epithelial tumors in children and adolescents malignancies of the ovaries arise from non-epithelial tissue of the ovary, such as immature teratoma, dysgerminoma, yolk sac tumors, gonadoblastoma and chorioncarcinoma. Mostly they present as a growing pelvic mass. It is unusual that they show an endocrine activity. Often they are sensible to chemotherapy which is mostly used as neo-adjuvant or adjuvant treatment in combination with surgery. Of the rare stroma cell tumors in children the two most common types are the juvenile granulosa cell tumor and the Sertoli-Leydig tumor. Because of their endocrine activity, important symptoms are precocious puberty in children and bleeding irregularities (even amenorrhoe) and/or virilisation in adolescents. Even here extirpation of the adnexae and chemotherapy was proposed as therapy, however given the rareness of these tumors the therapies were not discussed in detail. Of the epithelial tumors the serous and mucinous cystadenomas were mentioned, which are mostly benign, however a smaller. A rare case of ovarian cancer in a 12 year old girl with was shortly presented.

8. Precocious puberty

Precocious puberty and isolated premature thelarchy, pubarchy and menarchy were discussed. The normal pubertal progression with the hormonal changes and their physical consequences were recapitulated. In Sweden these patients are not primarily seen by a gynecologist. Still it was interesting to learn more about the isolated premature pubarchy that may occur between the ages of 1.-9 years and can be caused of an ovary cyst. However other causes for vaginal bleeding must be ruled out. No therapy was considered necessary. An ovary cyst could even give other symptoms of a precocious puberty and to differentiate the symptoms from a central precocious puberty a GnRH-test was recommended. Interesting was also the information that the accidental use of HRT or COC pills but even the use of hair tonic containing estrogen could cause signs of precocious puberty. Cases with different disorders in the pubertal progression were presented and diagnostic measures as well as treatment recommendations presented.

9. Hyperandrogenicity and PCO syndrome

The hormonal changes and their effects that are typical for the PCO syndrome were recapitulated. For Germany a prevalens of 5-7 percent of women in their fertile period of life was proposed (Tauchert S et al. Der Frauenarzt, 2004). For adolescents a

percentage of 8-26% was assumed (Michelmore , Clin Endo1999). It was emphasized that physical changes due to PCOS could be easily confused with normal alterations during adolescents: bleeding disorders, gain in weight and acne. The assessment of the PCOS was considered as important because of the well known long-term risks that are associated with PCOS including diabetes, metabolic syndrome, cancer of the endometrium and infertility. It was proposed that children that had been IUGR (Dörr HG, Gyn Endo 2005)and SGA (Levy-Marchal, Pediat Diab 2004) had an increased risk to develop PCO as well as girls with premature pubarche (Ibanez, J Clin Endo, 2004), obesity, lack of physical exercise and insulin resistance. In addition to the usual diagnostical measures including FSH, LH, SHBG and testosterone, it was recommended to assess cholesterol and triglyceride levels in the blood of obese girls. Moreover different methods for assessing insulin resistency were presented and hormone stimulation tests with ACTH to rule out CAH and with Dexamethason to rule out a Cushing syndrome were recommended. In addition to lifestyle changes and antiandrogen COC, Metformin was given when insulin resistance had been assessed. Most interesting here was the discussion about the late-onset CAH which can give more or less characteristic symptoms from mild bleeding irregularities to the typical symptoms of virilization according to the extend of the 21-hydroxylasis defect or more seldom the 11-hydroxylasis defect. To redress the effects of hyperandrogenicity and to promote the breast development besides cortisol substitution treatment with HRT or antiandrogen COC might be appropriate.

10. Turner's syndrome

The typical karyotypes of patients with Turner's syndrome include 45 X, 46X i(Xq) and 46XrX and 45X/46XX (mosaic). According to the lecturer up till 99% of all fetuses with Turner's syndrome do not survive the 28th week of gestation. Among the number of symptoms and disorders that are associated to the Turner's syndrome hypogonadim and short stature are the ones that can most frequently be found in patients with Turner's syndrome. Many patient's get their diagnosis as late as the ages 11-18, so that the gynecologist might be first to find the right diagnosis. The importance of the therapy with growth hormone and substitution of estrogen for the induction of puberty was elaborated. Other health problems that are common in patients with Turner's syndrome such as osteoporosis, aortic stenosis, diabetes type II, celiac disease, Crohn's disease, colitis ulcerosa, diseases of the thyroid and the mental difficulties were discussed. The basic diagnostic measures for the evaluation of delayed puberty in general were recapitulated.

11. Sexual violence

The perspicuity of the lecture and the amount of very instructive pictures made this lecture immensely useful. A clear distinction was made between acute and chronic sexual violence and it was emphasized that there is neither a group of definite abuse symptoms nor an abuse syndrome. 90% of all children who have experienced sexual violence would not have abnormal clinical findings. Only1% of all children with sexual violence in their history consults the gynecologist because of acute sexual abuse. However the lack of findings would not rule out that sexual violence had occurred. The examination after acute sexual violence is extremely important to be done correctly in order to secure forensic material, especially DNA and/or semen of the perpetrator. Moreover the examination is an important signal for the child that its body is normal

and that there is someone who shows interest and the will to help. For the examination after an acute assault 72 hours have been considered as the critical time limit. However this time-limit has been extrapolated from adult rape victim and for children the time limit is probably even shorter probably even shorter (24 hours). A history has to be taken very carefully and after that the inspection of the whole body is important to secure forensic material is as important as the gynecological examination. As appropriate examination technique it was proposed the separation and traction in supine position as well as the examination in knee-elbow-position. Force must never be used. The use of a colposcope was recommended. The findings could be divided in three groups: unspecific, such as anal dilatation-reflex, wide introitus, genital bleeding, reddening of the vulva, vaginal discharge, different configurations of the hymen; suspect: STD, evidence: DNA, semen. Even the different STDs were divided according to their conclusiveness concerning sexual assault. No evidential value was attributed to hepatitis B, bacterial vaginosis, Candida, Gardnerella vaginalis. Trichomonas vaginalis, herpes simplex type II and HPV were considered as suspect for sexual assault whereas the presence of Treponema pallidum, HIV Neisseria gonorrhoeae and Chlamydia trachomatis was considered as almost certain signs for sexual abuse. As few clinical finding actually have evidence value the credibility of the child's testimony is of great importance and must be assessed of a professional. The physician should only do the examination, give treatment for STD and supply postcoital contraception. A number of cases and pictures were presented and discussed. Valuable links and recommendations for further reading and courses in Germany were given.

12. Disorders of sex development

During the lecture were discussed the Swyer syndrome, CAIS/PAIS, CAH and Müllerian agenesis. Even aspects of the normal psychosexual development were elaborated and results of a small study, the Hamburg Intersex Study (Brinkman L, Schweizer K, Richter-Appelt H, Gyn Endo, 2007) were shortly presented. Ethical aspects such as the child's right of self-determination and the importance of a holistic way of counseling were emphasized. A obstetrician/gynecologist might see these kinds of disorders in the delivery room after the delivery of a baby with an inconclusive sexual phenotype, in the consultation for discrepancies in the pubertal development (CAIS, gonadal dysgenesis, Müllerian agenesis), after correction of genital malformations, for consultation about sexual function and questions of reproduction. The basics of the normal as well as the impaired sexual differentiation in the embryo were presented most understandable in flow charts.

Typical for children with Swyer syndrome would be the lacking pubertal development, primary amenorrhea, a female internal and external genital, however with streak ovaries, hypergonadotrop hypogonadism and a 46 XY karyotype. As therapy the induction of puberty with estrogen beginning at a bone-age of 11-12 years, removal of the streak gonads with laparoscopy (because of the increased risk for malignancy) and lifelong HRT was proposed. Pregnancy could be possible by the means of egg-donation which is not legal in Germany. Further the augmentation of the breasts could be discussed as an intervention during the later adolescence. A retrospective study from Michala et al 2008, BJOG was presented. The lecturer concluded that the early detection and therapy of the Swyer syndrome was important in order to prevent the development of malignant germ cell tumors and osteopenia / ostoporosis as well as initiating and supporting the child's psychosexual development.

Complete and partial androgen insensitivity syndrome

In contrast to children with Swyer syndrome, girls with CAIS have a “normal” pubertal development however they lack secondary terminal hair and present with primary amenorrhea. Examination reveals the absence of a uterus and sometimes a vaginal aplasia. Instead of ovaries CAIS patients have testes that can be confused with a uterus when located intra-abdominally. They may also present as inguinal hernia. The diagnosis is made by gynecological examination and blood sample (high androgens and 46 XY in the genetic analysis). The gonadectomy as it discussed controversially and there are no conclusive studies on the subject.

Patients with Müllerian agenesis present with primary amenorrhea, but normal pubertal development. Gynecological examination including rectal palpation and ultrasound reveals the lack of uterus and vagina. It was emphasized that it should be absolutely unnecessary to perform a diagnostic laparoscopy to confirm the diagnosis. In up till 30% of the cases the Müllerian agenesis is associated with malformations of the kidneys and/or the skeleton. For the construction of a functional vagina two methods were presented, the conservative dilation and surgical via the Vecchetti method. Named but not recommended was the construction of a vagina using a skin graft from the buttocks or using part of the colon.

In the context of DSD the CAH was not discussed in detail because there was a separate lecture about CAH. Still it was mentioned because of the deviant external genital which is characterized by a hypertrophy of the clitoris but can also be associated with a narrow introitus and vagina. Diagnosis and therapy were thus not elaborated in connection with DSD.

13. Disorders in breast development.

Traditionally in Germany diagnosis and therapy of breast disorders and abnormalities is part of the gynecologists work. Hence disorders in breast development were part of the course. The distribution of responsibilities is different in Sweden, but still the endocrinological aspects of the mammary glands are interesting and important even for gynecologists in Sweden. The lecturer recapitulated first the embryonic development of the mammary glands. Changes in hormone levels and their influence on the mammary glands from the fetal period till adolescence were shown. Anatomy and histology were discussed with focus on the structures that determine size, contour and firmness. The disorders were divided into endocrinopathy and congenital malformations. Endocrinopathies inhibiting the breast development such as Turner's syndrome, delayed puberty and CAH were discussed. Together with short stature and primary amenorrhea the lack of breast development is one of the cardinal symptoms of the Turner's syndrome. A HRT with estradiol in patients older than 12 was suggested as a possibility to improve breast development. A premature thelarche can be seen frequently and demands evaluation for precocious puberty and other sources for pathologic hormone levels. If they can be ruled out no therapy is necessary. Rarely a swelling of the mammary glands can be seen in infants, however even here no therapy is necessary. A bigger problem is the pubertal macromastia which can be confused with giant fibroadenoma of the mammary gland. If a growth inhibition of the mammary glands with dopamine agonists is not successful, the only effective therapy is the surgical reduction of the mammary glands. The lecturer recommended waiting at

least 2 years after the menarche before performing the surgery. Concerning congenital malformations polythelia, polymastia, retracted mamillas, hyperplasia of the Montgomery glands, amastia, athelia, hypoplasia of the mammary glands, asymmetries, tubular breasts, juvenile ptosis, juvenile striae, and the Poland syndrome were discussed. Rare disorders as the group of ectodermal dysplasias were shortly presented.

14. Contraception

The seminary on contraception focussed on young girls (14+/-), girls with chronic diseases, girls with handicap, girls with compulsive disorders, obesity and risk behavior. General advantages and disadvantages of COC were discussed. The COC (as well as patch and vaginal ring) that are currently on the German market were presented. The discussion about contraception for young girls included medical aspects, social aspects (emotional and social maturity) and legal aspects (German law). The recommendations for contraceptives for girls with chronic diseases followed the Medical Eligibility Criteria for Contraceptive use of the WHO. More detailed discussed were cases with diabetes, thrombophilia, migraine and epilepsy. The German recommendations did not differ much from those in Sweden.

15. Legal aspects

However irrelevant for physicians in Sweden but still interesting because of the vivid presentation of problems and cases was the lecture on legal aspects within child- and adolescent gynecology in Germany. Being as well lawyer as physician the lecturer had the unique ability to connect both perspectives. For me the lecture raised many questions how laws and regulations are exactly in Sweden, enhancing my motivation to improve my knowledge in this field.

Conclusion

The course covered a wide variety of the disorders and problems that are being met during the gynecological counseling of female children and adolescents. The lectures and seminars were well prepared and very informative, presenting many pictures and cases. There were many possibilities for discussions with other participants and the lecturers and the course was very well organized. It was all in all a very valuable course that can be recommended for German speaking colleagues who are interested in child- and adolescent gynecology from an interdisciplinary perspective.

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