CAPE NEWS

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Inside this Issue

Undescended Testes

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Cryptorchidism is a common male developmental anomaly, occurring in about 3.4-5.8% of term neonates. Premature and low birth weight babies are at increased risk because testicular descent usually occurs in the 35-40th week of gestation. Crypt-orchidism encompasses all abnormalities of testicular descent in which the testis does not reach the dependent part of the scrotum, i.e. either one or both testicles are missing from the scrotum, being lodged instead in the groin or inside the lower abdomen, such that they cannot be manipulated into the scrotum. **Ectopic testes** have an aberrant course (pre-penile, femoral, perineal or transverse scrotal). **Retractile testes** can be mani-pulated into the scrotum where they remain without tension. **Gliding testes** can be manipul-ated into the upper scrotum but retract when released. **Ascended testes** are previously descended but later "ascend" spontaneously.

Undescended testes may be broadly divided in two categories for management purposes: palpable & impalpable. *Continued on page 2*

ISPAE NEWS

ISPAE WEBSITE

We proudly announce our new website: www.ispae.org.in. Please use it, send contributions, suggest changes and improvements for it, and inform others who are likely to find it usefult.

ISPAE MEETINGS

We proudly announce ISPAE 2009: our first Biennial Meeting, at Maulana Azad Medical College, New Delhi: 13-15th November, 2009. Organizing Secretary: Prof Sangita Yadav, sangita_yadav@hotmail.com.

We proudly announce the first PET (Pediatric Endocrine Training program): ISPAE-PET 2009, to be held at the National Institute of Biologicals, NOIDA: 10-13 November, 2009. Contact: Prof Anju Seth, anju_seth@yahoo.com

NOTICE OF ELECTIONS

For all life members of ISPAE

On behalf of the Executive Council, I am announcing the start of the election process for office bearers and executive council

members of ISPAE. I have been appointed the Returning Officer by the current Executive. The rules in our constitution relevant to elections were sent to you by email. Only full life members (ie those of Pediatrics MD, DNB, DCH background) are eligible to stand for office or vote. If you have any queries related to whether you are eligible to stand for office, please email me.

Posts: Office bearers: 3 (President, Secretary-Treasurer, Joint Secretary). Executive members: 7.

1. Nomination on plain paper by a life member, seconded by another life member, must be sent to my office address given below. The nomination paper must mention names and address of candidate, proposer and seconder clearly. There is no limit on the number of candidates one may nominate. Last date for receipt of nominations is November 5th 2008. (Mail to Lucknow is slower than in the metros, please don't leave till last date).

Last date for withdrawal of nomination is November 15th.

2. Ballot papers to be sent out by November 18th.

3. Last date for receipt of votes by December 20th.

4. Declaration of results by email by December 22nd.

Vijayalakshmi Bhatia,
Secretary-Treasurer, ISPAE
Dept of Endocrinology, SGPGIMS, Raebareli Road, Lucknow 226014.

NEW MEMBERS

We extend a very warm welcome to our new members:

1. ANAGHA S AMBULKAR, Nagpur
2. SUNIL G AMBULKAR, Nagpur
3. ATUL ANEJA, Delhi
4. SAHUL BHARTI, Chandigarh
5. RAMASWAMY GANESH, Chennai
6. PRIYANKA GUPTA, Lucknow
7. GANESH JEVALIKAR, Mumbai
8. KARNAM RAVIKUMAR, Chennai
9. MEENA SEHGAL, Vadodara
10. ACHOUBA SINGH, Delhi
11. VASANTHI THIRUVENGADAM, Chennai.

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Problems of Undescended Testes: Testicles function optimally at 33ºC; i.e. 3-4ºC less than the core body temperature. A testis located in the inguinal canal or abdomen is exposed continuously to a higher temperature of 35ºC or 37ºC respectively, with consequent progressive alteration in morphology and physiologic function, as well as increased risk of complications. How-ever, early detection and correction measures give good results.

Infertility: Testicles are housed in the scrotum because sperm production requires a temperature 4°C lower than the body. By age 2 years, a testis residing outside the scrotum, in the high temperature zones of the abdomen or inguinal canal, starts to deteriorate. This becomes established by age 5 years. Two thirds of mature males with Undescended testicles are unable to father children.

Neoplasia: Lifetime risk of neoplasia in undescended testes is 2-3%, i.e. 4-fold higher than the average risk. This risk may remain even after corrective surgery. Onset usually occurs between age 25-40 years.

Trauma: An undescended testis is at higher risk of injury.

Hernia & Torsion: A boy with undescended testicles is at increased risk of inguinal hernia and torsion testes.

Poor self-image: Abnormal testicles can have a negative impact on the boy's confidence and self-esteem.

The development of the testicles: The testicles form inside the abdomen of the male fetus. At 6 weeks of gestation, primordial germ cells migrate to the genital ridge; at 7 weeks, testicular differentiation occurs; and by 8 weeks the testes are hormonally active. By 12 weeks the gubernaculum has attached the discernible testes to the lower epididymis and the processus vaginalis has developed. With increasing abdominal pressure and degeneration of the gubernaculum, testicular descent begins, and by the seventh month descent into the scrotum is almost complete. Androgen production is important as it is required for the development of the processus vaginalis and the functioning of the gubernaculum.

Physical exam and diagnosis: Pre-operative localization is reassuring to parents as well as treating surgeon. Undescended testicles are diagnosed by physical examination in a warm & friendly atmosphere.. In some cases, the missing testicle can be felt in the lower abdomen. A careful digital palpation locates

majority of testes. The importance of imaging facility such as ultrasound scan, in locating cryptorchid testis cannot not be over emphasized particularly the intra-abdominal. Ultrasound scan, abdominal CT & MRI are useful in some cases when testes are not palpable. These modalities have a high rate of false positives & negatives. Finally groin exploration is required in most cases.

Treatment options: In about half of cases, the condition corrects itself by the time the baby is three months old. These boys need to remain under surveillance in case they develop acquired undescended testicles later in childhood.

Hormonal therapy: Bilateral undescended testes at times are treated with hormone (HCG, GnRH & combined HCG& GnRH and LHRH) injections to prompt the testicles to descend. Exact mechanism of is unknown but most postulate the involvement of androgens action on the testicular cord or cremaster muscle in aiding descent. Results are variable, reported success rate ranging from 33% to 99%. Recommended dose is biweekly for 5 weeks 250IU to 1000IU depending on the age.

Surgical repair: Surgical correction is the preferred treatment. ***Ideally, the child should be aged between six months and 18 months at the time of surgery.*** Research suggests that future sperm quality in the affected testicle is compromised if the condition is corrected after the child is two years old.

Surgery to relocate the testicles inside the scrotum is called orchidopexy. The operation procedure is done under general anesthesia & usually a day care procedure. The conventional subdartos testicular fixing was done in all the cases. Laparoscopic intervention is required in locating & mobilizing intra-abdominal testes, which is followed by open orchidopexy.

Retractile testes usually do not require any intervention. Occasionally, the retractile testes remain so into early adolescence & result in atrophy. These children require an orchidopexy.

Vanished testicle: In about five per cent of cases, surgeons can't find the missing testicle. This condition may be due to a silent torsion or agenesis as evidenced by a blind ending vas deferens. It is thought that the developing testicle may have died in utero because of an interrupted blood flow. Vanished (or absent) testicle is also associated with other birth defects of the urinary system, such as abnormal blood vessel networks to the vas deferens

Ascended testes are previously descended but later "ascend" spontaneously. It can occur when the boy is aged between one and 10 years. The cause is thought to be that the spermatic cords, which attach each testicle to the body, fail to grow at the same rate as the rest of the child. The comparatively short spermatic cords gradually pull the testicles out of the scrotum and inside the groin. These boys require orchidopexy.

Further Reading:

1. Jeffery H Haynes MD Inguinal & scrotal disorders Surgical Clinics of North America 86(2006)371-381
2. Siam Oottamasathein MD, Peter D FurnesIII MD, Gerald Mingin MD, William O brant MD, Martin A KoyleMD. Management of undescended testes. Progress in Pediatric Urology, Vol 8, 2006, 85-104.
3. Hutson JM: Undescended Testis, Torsion, and Varicocele in Pediatric Surgery 2006 eds Grosfeld JL, O'Neill JA Jr,Fonkalsrud EW,Coran AG;sixth ed Mosby Elsevier Philadelphia USA pp 1193-1214.

PUBLICATION NEWS

It is always important to know our own data. Please send references of your papers or others you see, with pertinent Indian data.- Ed

Vitamin D status in apparently healthy adults in Kashmir Valley. Postgrad Med J 2007; 83:713–716. AH Zargar, S Ahmad, SR Masoodi, AI Wani, MI Bashir, BA Laway, ZA Shah.

As we get more "civilized" the prevalence of vitamin D deficiency is rising worldwide. There is data supporting this from Delhi, Lucknow and Tirupati. Now Prof Zargar's group reports from the Kashmir valley that of 92 healthy adults (64 men and 28 non-pregnant/ non-lactating women), 76 (83%) had vitamin D deficiency (VDD) —25%, 33%, and 25% had mild, moderate, and severe deficiency, respectively. [Definitions: normal: serum 25 (OH)

D concentration of >50 nmol/l; mild deficiency: 25–50 nmol/l; moderate: 12.5–25 nmol/l; severe: <12.5 nmol/l.]
VDD was found in 49/ 64 men and 27/ 28 women; 69.6% of the employed group and 100% of the household; equally prevalent in rural and urban areas. Calcium intake and urinary excretion were significantly lower in those with VDD, as was weekly sun exposure.

From Dr V Bhatia, SGPGI Lucknow:

1. Sahu M, Bhatia V, Aggarwal A, Rawat V, Saxena P, Pandey A, Vinita Das. Vitamin D deficiency in rural girls and pregnant women despite abundant sunshine in northern India. Clin Endocrinol 2008; (in press).
2. Boddula R, Yadav S, Bhatia V, Genitta G, Pandey D, Kumar A, Singh HK, Ramesh V, Julka S, Bansal B, Srikant K, Bhatia E. High prevalence of type 2 diabetes mellitus in affluent urban Indians. Diabetes Res Clin Pract. 2008 Aug;81(2):e4-7. Epub 2008
3 Das NK, Lyngdoh BT, Bhakhri BK, Behari S, Bhatia V, Jain VK and Banerji D. Surgical management of pediatric Cushing's disease. Surgical Neurology 2007; 67: 251-7

Journal Spice

P S N Menon

Increase in US childhood obesity appears to have halted

Childhood obesity, which has been on the rise for more than two decades, appears to have hit a plateau in the US, a potentially significant development in the battle against excessive weight gain among children. The finding is based on survey data gathered from 1999 to 2006 by a team of investigators of the Federal Centers for Disease Control and Prevention and published in the Journal of The American Academy of Medical Association, (**Ogden CL**, **Carroll MD**, **Flegal KM**, NCHS, CDCP, Maryland, USA. High body mass index for age among US children and adolescents, 2003-2006. ***JAMA*** 2008; 299(20): 2401-5)

The objective of the survey was to evaluate whether the prevalence of overweight among US children and adolescents increased between 1980 and 2004 by 3 measures of high body mass index (BMI) for age using the 97, 95 and 85th percentile of the 2000 CDC charts and to examine recent trends for US children and adolescents using national data with measured heights and weights. No statistically significant differences in the prevalence of high BMI for age were found between estimates for 2003-2004 and 2005-2006. Data for the 4 years were then combined to provide more stable estimates for the most recent time period. Overall, in 2003-2006, 11.3% (95% confidence interval [CI], 9.7%-12.9%) of children and adolescents aged 2-19 years were at or above the 97th percentile of the 2000 BMI-for-age growth charts, 16.3% (95% CI, 14.5%-18.1%) were at or above the 95th percentile, and 31.9% (95% CI, 29.4%-34.4%) were at or above the 85th percentile. Analyses of the trends in high BMI for age showed no statistically significant trend over the 4 time periods (1999-2000, 2001-2002, 2003-2004, and 2005-2006) for either boys or girls (P values between .07 and .41). The authors conclude that the prevalence of high BMI for age among children and adolescents showed no significant changes between 2003-2004 and 2005-2006 and no significant trends between 1999 and 2006. The study needs to be taken with cautious optimism. It is not clear

FORTHCOMING MEETINGS

1. APPES 2008: 5th Biennial Meeting of the Asia Pacific Pedistric Endocrine Society: 29 Oct- 1 Nov 2008, Seoul, Korea. Email: appes@willorganise.com.au.
2. TPE 2008: Therapeutic Patient Education 2008 Congress, including 4th International DAWN Summit: 5-8 Nov 2008, Budapest, Hungary. Email: tpe2008@kenes.com.
3. ICE 2008: 13th International Congress of Endocrinology: 8-12 Nov 2008, Rio de Janeiro, Brazil. Contact: Ruth Clapauch, rclapauch@uol.com.br. www.ice2008rio.com/
4. PEDICON 2009: 46th Annual Conference of the Indian Academy of Pediatrics: 22-25 January, 2009, Palace Grounds, Bangalore. Contact: Dr R Nisarga, pedicon2009@gmail.com; iap@pedicon2009.org. www.pedicon2009.org.
5. PEDICON 2009 Symposium: Theme: Adolescent Endocrinology in Pediatric Office Practice (**Chair:** Prof Meena Desai, Mumbai). Obesity: is it a problem in Indian children? Dr Vijayakumar, Cochin. **Symposium (Moderator:** Dr Vaman Khadilkar, Pune): 1. Management of menstrual disorders in adolescence. Dr Archana Arya, Delhi. 2. Management of hirsutism. Dr Sudha Rao, Mumbai. 3. Early puberty in girls. Prof Anju Seth, Delhi. 4. Late puberty in boys. Dr Anna Simon, Vellore.
6. WORKSHOP (PRE-PEDICON): Pediatric Endocrinology Workshop, Bangalore: 21 January, 2009. Contact: Prof P Raghupathy, p.raghupathy@gmail.com
7. ESPE/LWPES: 8th Joint Meeting: 9-12 Sep 2009: New York, USA. Contact: Paul Saenger, Fax: +856.439.0525. phsaenger@aol.com. & lwpes-espe2009@ahint.com. www.lwpes-espe2009.org
8. ISPAD 2009: 35th Annual Meeting: 16-18 Sep 2009, Ljubljana, Slovenia. Contact: Tadej Battelino, E-mail: tadej.battelino@mf.uni-lj.si
9. EASD 2009: 44th Annual Meeting, 26 Sep- 1 Oct, 2009: Vienna, Austria. www.easd.org/customfiles/easd/45th/4

whether this lull is permanent or whether it is the result of public anti-obesity efforts to limit junk foods and increase physical activity in schools.

Prader-Willi Syndrome and snoRNAs

Small nucleolar RNAs (snoRNAs) are a class of small RNA molecules that guide chemical modifications (methylation or pseudouridylation) of ribosomal RNAs (rRNAs) and other RNA genes (tRNAs and other small nuclear RNAs (snRNAs)). They are classified under snRNA in MeSH. snoRNAs are commonly referred to as guide RNAs but should not be confused with the guide RNAs (gRNA) that direct RNA editing in trypanosomes. PWS is caused by the deletion of the paternal copies of the imprinted SNRPN gene and necdin gene on chromosome 15 located in the region 15q11-13. This so-called PWS/AS region may be lost by one of several genetic mechanisms which, in the majority of instances occurs through chance mutation. Other less common mechanisms include: uniparental disomy, sporadic mutations, chromosome translocations, and gene deletions. Due to imprinting, the maternally inherited copies of these genes are virtually silent, only the paternal copies of the genes are expressed. PWS results from the loss of paternal copies of this region. Deletion of the same region on the maternal chromosome causes Angelman syndrome (AS). PWS and AS represent the first reported instances of imprinting disorders in humans.

A new paper (**Sahoo T, del Gaudio D, German JR, et al,** Baylor College of Medicine, Houston, Texas, USA. Prader-Willi phenotype caused by paternal deficiency for the HBII-85 C/D box small nucleolar RNA cluster. ***Nature Genetics*** 2008; 40: 719 – 721) reports an individual with the major features of PWS and a microdeletion in 15q11-q13 removing a cluster of snoRNAs. This report provides virtually conclusive evidence that PWS is caused by loss of expression of the C/D box HBII-85 snoRNAs.

Growth monitoring is worth doing! A call to start very early.

Two articles published in the Archives of Disease in Childhood **(Fayter D, Nixon J, Hartley S, et al,** York, UK**.** Effectiveness and cost-effectiveness of height-screening programs during the primary school years: a systematic review. ***Arch Dis Child*** 2008; 93: 278-284 and **Grote FK, van Dommelen P, Oostdijk W, et al** from Leiden, The Netherlands. Developing an evidence-based guideline for the referral of short stature. ***Arch Dis Child*** 2008; 93: 212-217) have shown that early identification and referral of children with abnormal growth is beneficial and that a good monitoring system is required even in UK.

The general consensus of health professionals in UK held at Coventry meeting in 1998 had concluded that routinely measuring children was not worth it and that GH deficiency and Turner syndrome were the only two conditions worth measuring for in the absence of evidence to the contrary. The results from these studies call for a complete about turn with Grote's group specifying at least 4 groups of children with growth disorders and Fayter et al confirming that new cases of a number of other

5th-welcome.html

10. ISPAE 2009: Biennial Meeting: 14-15 November, 2009: Maulana Azad Medical College, New Delhi. Details below.

ISPAD 2010: 36th Annual Meeting: 5-11 Sep 2010, Buenos Aires, Argentina. Contact: Olgar Ramos, E-mail: ramoso@interlink.com.ar

NEWS YOU CAN USE

Available with Dr Vijayalakshmi Bhatia (vbhatia@sgpgi.ac.in):
** **Growth charts** (based on KN Agarwal reference data)
** Locally made **orchidometers**.

DISCOUNTED APPES MEMBERSHIP ON OFFER

APPES would like to invite all existing members to renew their membership at a heavily discounted rate, and to encourage colleagues and friends with interest in pediatric endocrinology to join the Association. A discounted membership rate is available from now until 30 Nov 2008. You can now renew your membership or join APPES for: A$100 for 5 years; A$150 for 10 years. For those members who have already paid up in advance, you can pay this special rate, and your membership will automatically be extended by this period (i.e. if you have paid to Nov 2009, and you then choose the 5 year special rate, your membership will be extended to Nov 2014). By paying this membership fee, you also have the possibility of saving at least US$50 at each APPES Conference. If you would like to take advantage of this great offer, please log onto the APPES website and either log in as a member, or join APPES online. If you have any comments or questions, please do not hesitate to contact the APPES Secretariat at: appes@willorganise.com.au, Tel: +61 2 4973 6573. Fax: +61 2 4973 6609, Website: www.appes.org.

conditions may be identified as a consequence of height monitoring of primary-school-aged children which is cost-effective. This can lead to additional detection of other undiagnosed conditions for which short stature is a secondary presentation.

An accompanying editorial by Tam Fry in the same issue even goes on to state that "the protocol enshrined in *Health for All Children* 4th edition, Oxford and the *National Service Framework for Children,* London 2005 is not worth the paper it is written on"! Both these documents had stated that checking stature has no importance prior to a school entry growth screen and weight need be assessed only in the first year of life. This is in contrast to American Academy of Pediatrics recommendation (***Pediatrics*** Dec 2007; 120 (suppl):S164-192) asking every doctor working with children to perform, at a minimum, measurement as its first priority in the identification and management of obesity.

Constitutional delay of growth and puberty (CDGP) is equally common among girls and boys.

This was a bit of surprise. All known textbooks on pediatric endocrinology including our own ***Pediatric Endocrine Disorders*** (Desai MP, Menon PSN and Bhatia V, 2nd ed 2008, Orient Longman) state that CDGP is "more frequently encountered in boys" and that it has a familial background. Well, Wehkalampi and colleagues have something new to state! (**Wehkalampi K, Widén E, Laine T, et al** from Helsinki & Kuopio, Finland. Patterns of inheritance of constitutional delay of growth and puberty in families of adolescent girls and boys referred to specialist pediatric care. ***J Clin Endocrinol Metab*** 2008; 93: 723-8.)

They determined patterns of inheritance of CDGP in over 700 individuals (relatives and probands) from 124 families in which the index case had typical signs of CDGP (95 boys and 29 girls). The growth data were derived from a nationwide screening program, and were used to mark pubertal events (onset of pubertal growth spurt, maximal height velocity) and to assess the age of entry into puberty. There was a positive family history for CDGP in 79% of the families. A single, affected parent was most common - 45% had one parent and 32% had two parents affected. In families with CDGP in three generations, the pattern was consistent with autosomal dominant inheritance. The initial referral group had approximately three times as many boys as girls. However, the male-to-female ratio in first-degree relatives was 1.2:1 and was equal when second-, third-, and fourth-degree relatives were included in the analysis.

This reaffirms that CDGP has a strong familial component. CDGP was almost as common in male and female relatives of the CDGP subjects indicates that there is, in fact, no sex preference for CDGP and probably only a referral bias, even in Finland.

Workshop on Growth Monitoring in Pediatric Practice at the VII-IAP-GDBPCON – Mumbai 2008

A Preconference workshop on Growth Monitoring in Pediatric Practice was held on the 19th September 2008 at Sion Hospital, Mumbai. The workshop was organized by the Department of Pediatrics, LTMG Hospital, Sion, Mumbai Branch of IAP and the Navi Mumbai Branch of IAP. The convener was Dr Vaman Khadilkar (Pune) and the contributors Drs Anuradha Khadilkar, Raj Ganacharya and Rahul Jahagirdar. It was attended by 60 participants from all over India.

The workshop was divided into 5 modules. The first module "Introduction to Growth Charts" presented by Dr Vaman Khadilkar, dealt with the basic components of a growth chart, calculation of decimal age, height age (HA) and weight age (WA). The concept of target height (TH), target range and Tanner staging were introduced. The audience was then also introduced to various growth charts available for use such as height, weight, BMI, height velocity and disease specific charts such as Down syndrome, Turner syndrome, achondroplasia etc.

Throughout this workshop the charts used were the **IAP charts** as per the 2007 IAP monitoring guidelines published in Indian Pediatrics.

The next three modules were "hands-on". The second module, presented by Drs Ganacharya and Vaman Khadilkar, consisted of charting growth in normal children. Four cases were presented to the participants: they plotted height, weight, BMI and growth velocity on growth charts, then the significance of the findings was discussed.

The third module consisted of charting abnormal growth in children. Cases of children with chronic malnutrition, endocrine short stature, obesity and precocious puberty were presented to the participants and the significance of the growth charts as plotted by the participants was discussed. Participants were asked to calculate HA, WA, bone age (BA) and then compare them with chronological age (CA). Throughout the workshop the theme was using formulae such as [HA>WA>CA is precocious puberty]. It was thus emphasized that

sensible use of growth charts with calculations of HA, WA, CA will lead quickly to the diagnosis and avoid unnecessary tests.

The fourth module on "Bone Age" was presented by Dr Vaman Khadilkar. Tanner Whitehouse 3 and Gruelich and Pyle Methods were introduced, and a pediatrician's "Swiss-Army-Knife" for BA calculation presented. In this module the same concept of using HA, WA, CA was further extended to incorporate BA. Participants were asked to mark growth charts with BA and were shown how to interpret the height for the given BA.

In the fifth module "Growth Monitoring Guidelines", Dr Anuradha Khadilkar presented growth monitoring guidelines as per the recommendation of the IAP Growth Monitoring Guideline Committee, and discussed early referral criteria.

"Symposium on Growth & Development Monitoring"

A half day Symposium on this subject was organized by Dr Anju Seth on 9th August 2008 at Lady Hardinge Medical College, New Delhi. The focus was practical approach to growth and development assessment in routine pediatric practice and early detection of deviations from normal. The topics covered included use and interpretation of growth charts, growth monitoring, and growth faltering in the session on growth; and development screening, development assessment & approach to a child with developmental delay in the session on development. The more than 80 participants primarily comprised of post-graduate students and residents in Pediatrics. The faculty included Drs KN Agarwal, Sangeeta Yadav, Archana Dayal, and Anju Seth for the Growth Session, and Drs Sharmila BM, Monika Juneja and Praveen Suman in the Development Session. There was good faculty-participant interaction, which made the symposium an excellent academic activity.