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NEWS FROM SINGAPORE'S ACADEMIC TERTIARY HOSPITAL FOR WOMEN AND CHILDREN

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A paediatric patient undergoing transoral robotic surgery for obstructive sleep apnoea at KKH.

KK Women's and Children's Hospital (KKH) has successfully performed the first paediatric transoral robotic surgery (TORS) for obstructive sleep apnoea (OSA) in Singapore.

"Paediatric OSA is a type of sleep disorder, characterised by difficulty with breathing during sleep, often resulting in excessive tiredness and poor concentration," shares Dr Dawn Teo, Consultant, Department of Otolaryngology, KKH, who led the TORS team.

"The child had previously undergone an adenotonsillectomy to treat OSA, however, the symptoms returned seven years later."



KKH PERFORMS SINGAPORE'S FIRST PAEDIATRIC TORS

First paediatric transoral robotic surgery for obstructive sleep apnoea helps child sleep well

Further assessment revealed an obstruction at the tongue base – an area which has traditionally posed a challenge for surgical intervention, due to difficult access and a high risk of bleeding.

However, by combining the dexterity of a robot with the skills of the surgeon, and modifying the types of instrumentation to be used with the robotic arm, the KKH team successfully carried out TORS of the tongue base to treat the child's OSA. The patient consequently experienced complete resolution of symptoms and normalisation of sleep study results.

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KKH PERFORMS SINGAPORE'S FIRST PAEDIATRIC TORS

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IMPROVED OUTCOMES WITH ROBOTIC SURGERY

The robotic surgery was performed using the da Vinci surgical robotic system, which features high definition three-dimensional imaging and articulated arms, allowing for precise surgical manipulation within the narrow confines of the child's mouth.

The visualisation of the tissue planes and access to the surgical site that this approach offers is unparalleled, allowing the surgeon to perform a more complete assessment and precise resection of tissue in a very limited space. This translates to minimised blood loss and better post-operative outcomes.

ENHANCED MANAGEMENT FOR OBSTRUCTIVE SLEEP APNOEA IN CHILDREN

Paediatric OSA is caused by recurrent episodes of upper airway obstruction during sleep, which result in the disturbance of normal respiratory and sleep patterns. Common symptoms include snoring, periods of not breathing or restlessness during sleep, sleepiness during the day, behavioural problems and poor academic performance.

In children, the condition has been shown to negatively impact the child's neurocognitive and cardiovascular systems, quality of life, behaviour and school performance, as well as increase healthcare utilisation. Further, evidence shows that the implications of OSA on cardiovascular health in childhood adversely affect cardiovascular outcomes in adulthood.

Current treatment protocols for OSA centre on initial adenotonsillectomy and, should the surgery be unsuccessful, the long-term use of a continuous positive airway pressure (CPAP) machine to help the child breathe during sleep. CPAP compliance in children is difficult and many do not tolerate the discomfort associated with it. In severe or complex cases, a tracheostomy may even be necessary to alleviate the airway obstruction and allow oxygenation.

Even after undergoing an adenotonsillectomy, a significant population of children with OSA continue to experience residual or recurrent

symptoms, up to 85 percent of which are caused by obstruction at the tongue base. Recurrent or persistent OSA is especially prevalent in children with obesity, genetic syndromes, craniofacial abnormalities and neuromuscular disease. The Sleep Disorders Unit at KKH comprises respiratory physicians, ear nose and throat surgeons, dietitians, endocrinologists, anaesthetists and neurologists, who work closely to provide specialist care for patients with sleep disorders.

"TORS holds much promise for the future surgical management of other types of paediatric sleep disorders," says Dr Teo. "TORS may also reduce the number of tracheostomies required and provide an option of surgical cure for patients who are unwilling to continue with CPAP treatment."

The hospital has introduced a TORS service to treat various conditions in women and children, which include oral cavity cancers, lesions of the tongue, oropharynx and hypopharynx as well as OSA.

Paediatric OSA belongs to a group of sleep disorders, termed sleep disordered breathing (SDB). The global prevalence of paediatric SDB ranges from 0.9 percent to as high as 13 percent, increasing alongside the growing incidence of obesity.

Common signs and symptoms of paediatric sleep disordered breathing include:

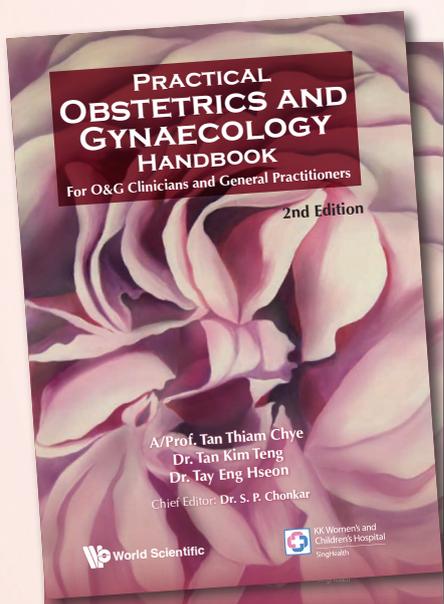
- ★ Loud snoring, choking or grunting during sleep
- ★ Sleepiness during the day
- ★ Behavioural problems, such as short attention span and hyperactivity
- ★ Poor academic performance

Children who experience snoring in addition to one or more of the above symptoms should be referred for tertiary assessment.



KKH CLINICIANS CO-AUTHOR PRACTICAL OBSTETRICS AND GYNAECOLOGY HANDBOOK

Contributed by: Associate Professor Tan Thiam Chye, Head and Senior Consultant, Inpatient Service, Department of Obstetrics & Gynaecology, Deputy Campus Director, Education Office; Dr Tan Kim Teng, Senior Consultant, Division of Obstetrics & Gynaecology; Dr Sonali Chonkar, Senior Staff Registrar, Department of Obstetrics & Gynaecology, KK Women's and Children's Hospital



Clinicians from KK Women's and Children's Hospital (KKH) have led the production of a practical obstetrics and gynaecology (O&G) handbook for medical practitioners. The 'Practical Obstetrics and Gynaecology Handbook – for O&G Clinicians and General Practitioners (2nd Edition)' provides simple, practical and cost-effective guidelines in the management of common O&G conditions in Singapore.

The handbook provides concise, evidence-based knowledge on the current management of a comprehensive list of O&G-related conditions and issues, including: menstrual disorders, abnormal Pap smears, gynaecological cancers, endometriosis, fibroids, ovarian cysts, pelvic organ prolapse, voiding abnormalities, sub-fertility, vaginal discharge, sexually-transmitted infections, menopause, hormone replacement therapy, pregnancy and its complications, safe medication during pregnancy and lactation. It also covers common O&G investigations, screening for Down syndrome, ultrasound in obstetrics, prenatal screening for thalassaemia and approaches to galactorrhoea and hyperprolactinaemia.

Listing Senior Consultants from the hospital's Division of Obstetrics & Gynaecology, Associate Professor Tan Thiam Chye and Dr Tan Kim Teng amongst its authors, the handbook offers first-hand advice on the practical management of O&G conditions, including referral criteria and guidelines, and patient counselling. It also explores notable recent advances in the field of O&G, including the latest research on the human papilloma virus vaccine and contraceptives, as well as International Federation of Obstetricians and Gynaecologists (FIGO) recommendations for abnormal uterine bleeding.

"To achieve the best possible care for patients, all medical management must be grounded in the latest medical standards and clinical evidence," says Dr Sonali Chonkar, Chief Editor of the handbook and Senior Staff Registrar, Department of Obstetrics & Gynaecology, KKH. "By the same token, the frontiers of clinical care and research are advancing at a tremendous rate."

"Our goal is to demystify issues associated with the field of O&G and encourage seamless, integrated and cost-effective management for all patients. To that end, the handbook is problem-oriented and designed to facilitate quick referencing.

This is particularly useful to aid daily clinical practice for medical professionals in the primary healthcare setting. It also serves as an essential guide for medical students, resident doctors, nurses, general practitioners and O&G specialists," adds Dr Chonkar.

The official launch of the handbook was held at KKH in May 2014.

"The handbook is problem-oriented and designed to facilitate quick referencing. This is particularly useful to aid daily clinical practice for medical professionals in the primary healthcare setting.

It also serves as an essential guide for medical students, resident doctors, nurses, general practitioners and O&G specialists."

Dr Sonali Chonkar

Chief Editor of the 'Practical Obstetrics and Gynaecology Handbook – for O&G Clinicians and General Practitioners (2nd Edition)', and Senior Staff Registrar, Department of Obstetrics & Gynaecology, KKH

For more information about the purchase of the 'Practical Obstetrics and Gynaecology Handbook – for O&G Clinicians and General Practitioners (2nd Edition)', please contact Cynthia at **+65 9668 1004**.

ENABLING THE BEST START FOR BABY

Scientific and medical research has shown time and again that the best care and nutrition that can be given to a newborn comes from the mother.

Breast milk alone contains the complete nutrition required for optimal growth and development from birth to six months, and is medically considered to be the gold standard for infant sustenance. Breast milk contains vitamins, antibodies and anti-infective properties, which fortify the baby's immune and digestive systems against allergens, bacteria and viruses. Studies have shown that breastfed children have a reduced risk of sudden infant death syndrome, diarrhoea, and respiratory and middle ear infections in comparison to formula-fed babies.

Facilitating a close bond between mother and baby during the early stages of life is vital for the baby's emotional wellbeing and development. Studies show that babies who room-in with their mothers cry less than babies who stay in nurseries. Guidelines from the Baby-Friendly Hospital Initiative (BFHI) – a global effort by the World Health Organisation and UNICEF – recommend that babies experience skin-to-skin contact with their mothers within five minutes after birth for at least an hour, and stay in their mother's room during the day and night.

Breastfeeding on demand and maintaining frequent skin-to-skin contact with their baby has many health and emotional benefits for mothers as well. These include emotional gratification, uterine involution, reduced postpartum blood loss, lower risk of breast and ovarian cancer, more significant postpartum weight loss and reduced risk of type 2 diabetes. Exclusive breastfeeding during the first six months also helps in child spacing as it delays the mother's return to fertility.



KKH ACHIEVES BFHI ACCREDITATION

KK Women's and Children's Hospital (KKH) has been accredited as a baby-friendly hospital under the BFHI.

"As the largest maternity centre in Singapore, we fully support breastfeeding and have long practised many of the baby-friendly initiatives recommended by the BFHI guidelines," shared Dr Chua Mei Chien, Senior Consultant, Department of Neonatology and chairperson of the KKH BFHI Steering Committee. "This accreditation affirms our enduring commitment to excel in maternal and neonatal care, and has enabled us to further strengthen our protocols and maintain a standard of care that is very much in step with international best practices."

Institutions are designated 'baby-friendly' when they fulfill the ten steps to successful breastfeeding. These include educating mothers-to-be on the benefits and management of breastfeeding for their baby's health; encouraging mothers to have skin-to-skin contact with their baby immediately after birth; helping new mothers to initiate breastfeeding after birth and establishing correct breastfeeding and lactation techniques while in hospital; not using formula milk supplementation, feeding bottles or teats unless medically indicated and rooming in of newborns with their mothers both day and night. Free or low-cost breast milk substitutes are also not accepted, in compliance with the International Code of Marketing of Breast-milk Substitutes.

The implementation of the BFHI guidelines and accreditation in Singapore is led by Health Promotion Board and Association of Breastfeeding Advocacy (Singapore).





PRACTICAL TIPS TO ENCOURAGE BREASTFEEDING AND BONDING

The ability to breastfeed successfully in the first few days after birth has a direct impact on the period of time that mothers continue breastfeeding, and the physical contact that it engenders can help to facilitate bonding between mother and baby. Thus, information and support from healthcare providers is vital during the initial period after delivery to encourage breastfeeding and bonding, and help the new mother to manage any problems that she may encounter.

To encourage the establishment of a regular supply of breast milk, for the first six months, new mothers should be encouraged to:

1. Observe for early feeding cues (e.g. rooting, sucking on a fist)
2. Initiate breastfeeding when the baby shows readiness (e.g. arousal from sleep and increased alertness)
3. Breastfeed the baby on demand as often as the baby wants and for as long as they show signs of hunger
4. Maintain regular skin-to-skin contact with their baby. This helps to stimulate the hormones needed for milk production and emotional bonding
5. Breastfeed exclusively with no supplementation of formula milk or water
6. Avoid baby formula supplements unless medically indicated
7. Avoid using bottles, artificial teats or pacifiers when breastfeeding unless medically indicated
8. Seek medical assessment for any discomfort or difficulty with breastfeeding

Breastfeeding may be contraindicated in certain situations. These can include maternal conditions such as breast or ovarian cancer needing chemotherapy or radiotherapy, or neonatal conditions such as inborn errors of metabolism, for which special milk may be required.

If breastfeeding is temporarily disrupted, mothers should be encouraged to:

1. Continue expressing milk to maintain milk production and prevent engorgement
2. Practice safe storage of expressed breast milk
3. Maintain regular skin-to-skin contact with their baby. This helps to stimulate the hormones needed for milk production and emotional bonding

COMMON PROBLEMS RELATED TO BREASTFEEDING

A perception that their baby is demanding to be fed too often, or that their milk supply is inadequate or slow in establishing itself are often cited by mothers as reasons for discontinuing breastfeeding. Overly frequent feeds of one or more times in an hour can be a sign of poor attachment and this should always be reviewed if the mother is expressing concerns about how often she is feeding.

Possible physical problems mothers may face during breastfeeding can include blocked milk ducts, engorgement and mastitis. These may be resolved through reviewing the breastfeeding position and attachment, and the frequency of milk expression or feeding, with the help of a lactation consultant.

Women should be referred to a tertiary centre for breastfeeding issues if they experience any of the following:

1. Recurrent intense pain in one or both breasts, which may indicate engorgement
2. Red, hot, or swollen breast or a hard, tender, reddened area on the breast, which may indicate engorgement and blocked ducts with possible breast abscess
3. Flu-like symptoms, including a fever of more than 38.5 degrees Celsius, which may indicate mastitis



HELP FOR MUMS

- The Lactation Clinic at KKH helps new mothers and babies with issues related to lactation and breastfeeding. To make an appointment, please call **+65 6225 5554** (8.00am to 4.30pm, Monday to Friday).
- The KKH-Ask-A-Nurse Service gives mothers telephone access to a qualified nurse daily from 8.00am to 12.00am. The service is available at **1900-556-8773** with a call charge of \$0.80 per minute.
- Useful information and tips on breastfeeding are also available at **www.kkh.com.sg/healthpedia**.

MICROSCOPIC HAEMATURIA IN WOMEN

The role of the primary care physician

Dr Priyanka Singh, Clinical Fellow; Associate Professor Han How Chuan, Head and Senior Consultant, Department of Urogynaecology, KK Women's and Children's Hospital

INTRODUCTION

Haematuria occurs as visible or microscopic traces of blood in the urine. Microscopic haematuria (MH) is defined as three or more red blood cells (RBC) per high power microscopic field in the sediment from two out of three freshly-voided, clean-catch, midstream urine specimens.

Patients with symptomatic haematuria may present with fever, nausea, vomiting, flank pain, dysuria, urgency or frequency. The prevalence of asymptomatic MH ranges from 0.19 to as high as 21 percent of the global population. Significantly, five percent of patients with MH will be found to have a malignant cause. This is noteworthy for the primary care physician, who is often the first point of medical contact for patients.

AETIOLOGY

MH can be caused by a wide spectrum of genitourinary problems. It is considered clinically significant as it may occasionally be an early sign of potentially serious renal and urological pathologies. The traces of blood can originate from anywhere along the urinary tract between the renal glomerulus and the urethral meatus.

Causes of MH may be generally classified by their site of origin – glomerular or non-glomerular. Glomerular causes of MH arise from the kidney. Non-glomerular causes can be subdivided into the region of the upper urinary tract, comprising the kidney and ureter; or the lower urinary tract, comprising the bladder and urethra. These are outlined in Table 1.

EVALUATION

The cornerstone of evaluating patients with MH is a thorough medical history and directed physical examination.

Signs to look for in a patient's medical history include:

- Prior history of urologic disease or interventions
- Presence of flank pain, fever or urinary symptoms such as dysuria, frequency and urgency
- Association with other activities (e.g. menstruation, physical exertion)
- Presence of high risk factors (Table 2)

Symptoms to note during physical examination include:

- Presence of hypertension
- Facial or pedal oedema
- Fever, costovertebral angle tenderness

The presence of significant proteinuria – more than 300mg of protein in the urine over 24 hours, RBC casts, elevated serum creatinine levels, or a predominance of dysmorphic RBCs in the urine on phase contrast examination, point towards a glomerular aetiology of MH (Figure 1).

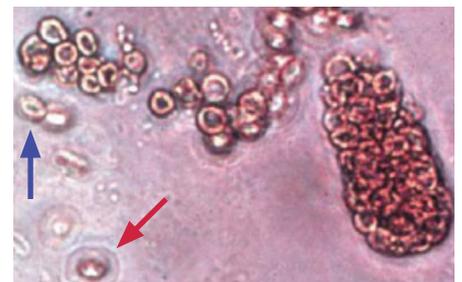


Figure 1. An RBC cast and RBCs present in the urinary sediment of a urine specimen. The small, dysmorphic RBC (blue arrow) suggests a glomerular source; the uniform, biconcave disk-shaped normal RBC (red arrow) suggests nonglomerular bleeding.

TABLE 1. CAUSES OF MICROSCOPIC HAEMATURIA

GLOMERULAR	
<ul style="list-style-type: none"> • Immunoglobulin A nephropathy (Berger's disease) • Thin glomerular basement membrane disease (benign familial haematuria) • Hereditary nephritis (Alport's syndrome) • Mild focal glomerulonephritis of other causes 	
NON-GLOMERULAR	
Upper urinary tract	Lower urinary tract
<ul style="list-style-type: none"> • Nephrolithiasis • Pyelonephritis • Polycystic kidney disease • Hypercalciuria, hyperuricosuria • Papillary necrosis • Renal cell cancer • Ureteral transitional cell carcinoma • Renal infarction, arteriovenous malformation 	<ul style="list-style-type: none"> • Bacterial cystitis (urinary tract infection), urethritis • Strenuous exercise (e.g. marathon runner's haematuria) • Transitional cell carcinoma of the urinary bladder or urethra • Spurious haematuria (e.g. menstruation, atrophic vaginitis) • Urinary tract instrumentation • Benign, or unexplained MH • Benign bladder and ureteral polyps and tumours

Plain film X-ray, intravenous urography, computed tomography and ultrasonography are often used to evaluate the upper urinary tract of patients with MH. The presence of renal cystic masses, solid lesions or urinary stones point towards a non-glomerular aetiology of MH originating in the upper urinary tract.

Despite imaging and assessment of urine for signs of glomerular disease, the aetiology of asymptomatic MH remains unclear in 70 percent of patients. Urine cytology and cystoscopy may then be conducted to evaluate the lower urinary tract for the presence of bladder lesions and carcinoma in situ.

MANAGEMENT

Spurious causes of microscopic haematuria, such as strenuous exercise, sexual activity and menstruation should be ruled out. Atrophic vaginitis should be treated with vaginal oestrogens and urinalysis repeated after four weeks.

Urinary tract infections should be treated with a course of antibiotics, followed by urinalysis and urine culture in four to six weeks. Any evidence of renal parenchymal disease should prompt a referral to a nephrologist for consideration of a kidney biopsy and treatment.

Kidney stones smaller than four millimetres are likely to pass spontaneously, but this is less likely for stones larger than seven millimetres. Symptoms such as pain, fever or renal or ureteric obstruction with hydronephrosis should prompt a referral to a urologist for possible stone extraction.

Patients with recurrent stones should undergo metabolic testing to prevent or reduce the frequency of the development of subsequent stones. Patients with renal or transitional cell carcinoma of the urinary tract should be urgently referred for assessment by a urologist.

MANAGEMENT OF IDIOPATHIC MICROSCOPIC HAEMATURIA

Approximately 10 to 20 percent of patients with MH will have no identifiable cause, despite an extensive urological workup. While the recommended follow-up for patients with idiopathic MH is debated, an acceptable approach includes half-yearly urinalysis and urine cytology, followed by yearly cystoscopy. This is especially important for patients older than 40 years and patients with risk factors for urothelial cancer (Table 2).

TABLE 2. RISK FACTORS FOR SIGNIFICANT DISEASE IN PATIENTS WITH MICROSCOPIC HAEMATURIA

- A history of smoking
- Occupational exposure to chemicals or dyes containing benzenes or aromatic amines
- Age more than 40 years
- Analgesic abuse
- History of pelvic irradiation
- History of urologic disorder or disease
- History of gross haematuria, i.e. visible traces of blood in the urine
- History of irritative voiding symptoms
- History of urinary tract infection



References

1. Grossfeld GD, Wolf JS Jr, Litwan MS, Hricak H, Shuler CL, Agerter DC, et al. Asymptomatic microscopic haematuria in adults: Summary of the AUA best practice policy recommendations. *Am Fam Physician*. 2001;63:1145-54
2. Patel JV, Chambers CV, Gomella LG. Haematuria: etiology and evaluation for the primary care physician. *The Canadian Journal of Urology*. 2008;15(supplement 1):54-62
3. Oz H, Yuksel B. Asymptomatic microscopic haematuria in women requires separate guidelines. *Int Urogynecol J*. 2013;24:203-06



Dr Priyanka Singh graduated with a Doctorate of Medicine from Jawaharlal Institute of Postgraduate Medical Education and Research, India, and obtained her Membership of the Royal College of Obstetricians and Gynaecology. Dr Singh is currently a Clinical Fellow with the Department of Urogynaecology, KKH.



Associate Professor Han How Chuan graduated from National University of Singapore and subsequently obtained his Membership of the Royal Australian and New Zealand College of Obstetrics and Gynaecology. He is also a Fellow of the Royal College of Obstetricians and Gynaecologists, and the Academy of Medicine, Singapore.

Assoc Prof Han's research interests include pelvic floor reconstructive surgery and female stress urinary incontinence surgery. He is also active in education as Adjunct Associate Professor, Duke-NUS Graduate Medical School; Senior Clinical Lecturer, Yong Loo Lin School of Medicine; and faculty member, SingHealth Obstetrics & Gynaecology Residency Program.

SURGERY-FIRST ORTHOGNATHIC APPROACH: A KKH PERSPECTIVE

Dr Narayan Gandedkar, Dental Officer Specialist, Dental Service, KK Women's and Children's Hospital

Jaw deformities can arise due to an oversized mandible, a severely deficient midface or deformities affecting the skeletal symmetry of the face, such as a cleft palate. Such deformities not only cause aesthetic disfigurement, which can negatively impact the patient's self-esteem, but also pose functional disturbances due to inadequate occlusion or alignment of the teeth, aberrant jaws and jaw joint problems. This can result in patients experiencing difficulties with biting, chewing or speech.

Orthognathic surgery treatment is intended as a corrective treatment, which aims to re-establish the form, function and shape of the craniomaxillary complex, aid normal speech, achieve harmonious occlusion and optimise psychosocial and developmental outcomes.

However, orthognathic surgery treatment traditionally involves a prolonged period of pre-surgical orthodontic treatment and an equally lengthy post-surgical orthodontic management, making the total treatment period of three-to-four years too exhaustive for the patient to abide by. In addition, highly visible orthodontic braces and possible worsening or aggravation of the existing deformity during the treatment can have a negative psychosocial impact on the patient. This can lead to a considerable amount of dissatisfaction and may impact the patient's willingness to continue with treatment.



SHORTER TREATMENT DURATION WITH A SURGERY-FIRST APPROACH

The surgery-first orthognathic approach (SFOA) is a treatment technique which offsets all the aforementioned untoward effects of conventional orthognathic surgery while producing equally good outcomes.

As the term explains, SFOA sees orthognathic surgery being carried out first, followed by orthodontic treatment to correct or align the teeth. Following orthognathic surgery, a period of rapid metabolic activity within tissues ensues, known as regional acceleratory phenomenon (RAP). By performing surgery first, RAP can be harnessed to facilitate efficient orthodontic treatment. This phenomenon is believed to be a key factor in the notable reduction in treatment duration using SFOA.

In this way, SFOA entails a significantly shorter treatment duration with fewer treatment stages, in comparison to conventional orthognathic treatment, along with the possibility of immediate correction of the problem. A full comparison of the salient features of SFOA and conventional orthognathic surgery is outlined in Table 1.

SURGERY-FIRST ORTHOGNATHIC TREATMENT AT KKH

At KK Women's and Children's Hospital (KKH), multidisciplinary teams comprising specialists in orthodontics, plastic surgery and oral and maxillofacial surgery work closely to create a holistic and individualised treatment plan for each patient.

This comprises the use of high quality pre-treatment records to facilitate three-dimensional cone beam computed tomography analysis (3D-CBCT) (Figure 1) and face-bow transfer.

Plaster models of the craniomaxillary complex are then created, enabling the orthodontist to create surgical bite wafers, which act as guides to assist the surgeon in the accurate placement of the patient's jaws during actual surgery.

Post-surgically, the case is completed orthodontically to achieve proper aesthetics and function (Figure 2), in significantly lesser time as compared to the conventional approach.

Due to this obvious benefit, treatment using SFOA has gained popularity in recent years.

Since 2012, 12 patients have undergone SFOA at KKH. The Dental Service at KKH is currently conducting a prospective computed tomography study to evaluate the immediate post-operative stability and behaviour of the jaw joint during and after SFOA in comparison with conventional orthognathic surgery.

The study is slated to be completed by October 2014.

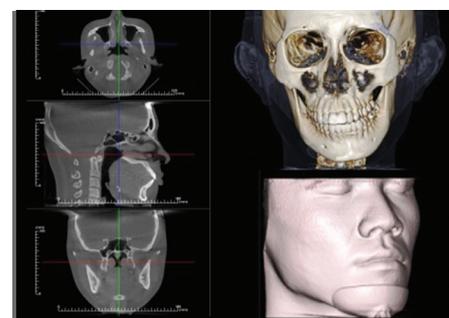


Figure 1. 3D-CBCT analysis of a patient's craniomaxillary complex to facilitate pre-surgery planning.

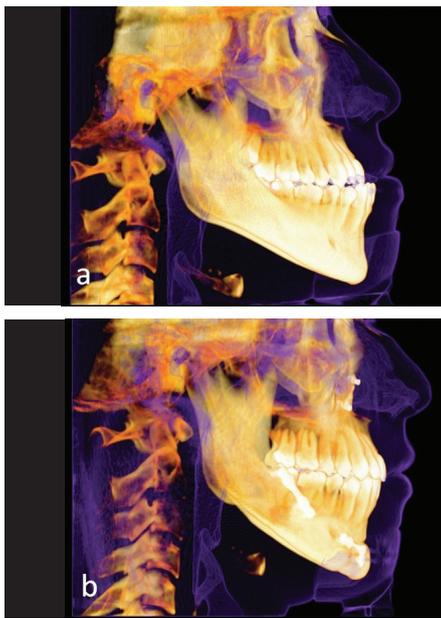


Figure 2. Pre-treatment (a) and post-treatment (b) comparison of a patient who underwent SFOA to correct a large disfiguring lower jaw and crooked teeth, which had caused lisping speech and difficulty with chewing.

THE REFERRAL CRITERIA FOR TERTIARY ASSESSMENT FOR ORTHOGNATHIC INTERVENTION INCLUDES:

1. An excessively large jaw
2. Difficulty with chewing; especially if the front teeth are involved
3. Speech difficulty involving the jaw alignment
4. Jaw joint problems such as experiencing pain or a clicking sound in the ear, particularly when opening and closing the mouth
5. Complex craniofacial anomalies and syndromes, such as the Apert and Crouzon syndromes, hemifacial microsomia and mandibulofacial dysostosis, leading to aesthetic disfigurement, functional imbalance and psychosocial impediment

Patients with pre-existing craniofacial syndromes who experience difficulty with breathing and impending vision impairment should be referred to seek urgent tertiary management.

TABLE 1. COMPARISON TABLE OF THE SALIENT FEATURES OF CONVENTIONAL ORTHOGNATHIC SURGERY AND SFOA

SALIENT FEATURES	SURGERY-FIRST ORTHOGNATHIC APPROACH (SFOA)	CONVENTIONAL ORTHOGNATHIC SURGERY
Pre-surgical orthodontic treatment time	1 – 4 weeks	1.5 – 2 years
Stages involved	1. Jaw surgery 2. Post-surgical orthodontics	1. Pre-surgical orthodontics 2. Jaw surgery 3. Post-surgical orthodontics
Post-surgical orthodontic treatment time	8 – 12 months	12 – 18 months
Immediate correction of the problem	Possible - which can lead to better compliance during treatment	Not possible - due to the pre-surgical orthodontic phase
Option of surgery during the treatment	The option of surgery during treatment can be flexible to accommodate the patient's convenience	Surgery is only possible after the pre-surgical decompensation period, which is typically 1.5 – 2 years
Exaggeration of existing jaw deformity	None	Yes, due to the necessity for proper decompensation of the dental arches
Functional deficiency (e.g. difficulty with chewing or speech)	Functions such as chewing and speech may not be affected as surgery is carried out before orthodontic treatment is effected	There is a possibility of functional deficiency during pre-surgical orthodontics due to the exaggeration of an existing deformity
Overall treatment time	Less than 1 year	3 – 4 years



Dr Narayan Gandedkar graduated from Rajiv Gandhi University of Health Sciences in India, and pursued a fellowship in cleft and craniofacial orthodontics at Chang Gung Memorial University and Hospital, Taiwan. In addition to his appointment as Dental Officer Specialist, Dental Service, KKH, Dr Gandedkar also serves as honorary secretary for the Cleft Lip and Palate Association of Singapore.

Dr Gandedkar's clinical research interests include cleft and craniofacial orthodontics, the orthodontic management of craniofacial syndromes and nasopalveolar molding therapy for infant orthopaedics. He is also a member of the review board of several international journals, including World Journal of Orthodontics and Orthodontic Waves.

MANAGEMENT OF HYPERPIGMENTATION IN WOMEN

Dr Liew Hui Min, Associate Consultant, Dermatology Service, KK Women's and Children's Hospital

Hyperpigmentation is the darkening of an area of skin, caused by increased melanin – the pigment found in skin, eyes and hair. Disorders of hyperpigmentation usually result from an increase in melanin production and, on occasion, from an increase in the density of active melanocytes – cells which produce melanin.

The most common presentations of hyperpigmentation in women seen in dermatology clinics in Singapore and other Asian countries are post-inflammatory hyperpigmentation, melasma and lentigines. These can have a significant cosmetic impact, which may negatively affect patients' psychosocial wellbeing.



Figure 1. Post-inflammatory hyperpigmentation secondary to excoriations due to eczema



Figure 2. Melasma occurring over the cheekbone region



Figure 3. Lentigines occurring over the cheek region

POST-INFLAMMATORY HYPERPIGMENTATION

Post-inflammatory hyperpigmentation (PIH) is caused by an excess of melanin pigment following cutaneous inflammation or injury (Figure 1). The condition is extremely common in Singapore, with an incidence of 1.9 percent, and is especially prevalent in individuals with dark pigmented skin.

Disorders that commonly lead to PIH include acne, insect bites, bacterial skin infection, atopic dermatitis, psoriasis and lichen planus, the latter of which is notorious for causing persistent PIH which may last for years. Existing PIH can also be exacerbated by continued inflammation, trauma or exposure to ultraviolet irradiation.

The pattern and distribution of the PIH may provide clues to its underlying aetiology; for example a distribution of clusters of PIH on the lower legs may be suggestive of insect bites. Thus, detailed history-taking is crucial in diagnosing the root cause of PIH. Occasionally, patients may document the presentation of PIH through photos, which can assist in the diagnosis.

MELASMA

Melasma, also known as chloasma, is a common acquired disorder characterised by symmetric, hyperpigmented patches with ill-defined outlines (Figure 2). Melasma occur most commonly in the centrofacial area sparing the philtrum, the cheekbone region and the mandibular area along the jawline.

Less common sites include the extensors of forearms and mid-upper chest. At least 90 percent of patients with melasma are women. Prevalence data is scant but melasma is thought to be very common among Asian women with dark pigmented skin.

The condition is caused by an increase in the number and activity of melanocytes in the epidermis and/or dermis. Exacerbating factors include sun exposure, the use of oral contraceptives and pregnancy – melasma are commonly termed 'mask of pregnancy'. Melasma appear light brown when they occur on the epidermis and bluish-grey when they occur on the dermis.

LENTIGINES

Lentigines are brown, circumscribed macules with well-defined edges, which commonly occur on chronically sun-exposed skin over the face (Figure 3), forearms and hands. Lentigines may evolve slowly over years or appear suddenly.

As they can easily be mistaken for a birthmark or mole, a detailed history of the pigmentation and close examination are necessary for accurate diagnosis. The sudden appearance of multiple lentigines may also be a symptom of an underlying syndrome, e.g. Peutz-Jeghers syndrome – an autosomal dominant inherited disorder characterised by intestinal hamartomatous polyps.

MANAGEMENT OF HYPERPIGMENTATION

TREATMENT

Several treatment options exist for the management of hyperpigmentation. In the case of PIH, hyperpigmentation may be temporary if the melanin deposit occurs in the epidermal layer of the skin. Treatment is usually unnecessary as long as the underlying skin conditions are treated or controlled. However, if treatment is required, the management will be similar to that of melasma and lentigines depending on the location and concentration of the melanocytes.

Topical treatment

Melasma and lentigines present a treatment challenge. Topical treatment with a triple combination cream containing hydroquinone, retinoid and a mild steroid has been proven to be effective as compared with other agents, such as hydroquinone alone, kojic acid cream, dual combination creams and peels such as glycolic acid, salicylic acid and Jessner. The use of hydroquinone should be closely supervised by a dermatologist as chronic use of this agent may lead to permanent ochronosis, which is bluish-black discolouration of the skin, cartilage and ocular tissues.

Lasers

The use of lasers is an increasing trend in the treatment of pigmentation. Patients should be counselled on the potential side effects of laser treatment, which include hyperpigmentation – which is particularly common in Asian skin, hypopigmentation, scars, recurrence and possible downtime from work. Sunscreen application before and after laser treatment is strongly recommended.

The most widely used pigment-specific lasers are Quality (Q)-switched lasers, which have nanosecond pulse duration and can selectively target melanosomes – pigment granules that provide tissues with colour. Several types of Q-switched lasers, with varying wavelengths, are currently in use. Patients with darker skin types require treatment with lasers that have longer wavelengths, as there is less absorption by

epidermal melanin at a longer wavelength, resulting in a lower risk of epidermal injury and pigment alterations. However, in superficial pigmentation such as lentigines, a short wavelength is often sufficient.

Intense pulsed light

An alternative treatment to laser is intense pulsed light (IPL), which uses a broad spectrum of wavelengths that can be changed for each patient to target specific structures in the skin. The light energy absorbed by the melanin in the keratinocytes and melanocytes causes them to coagulate and form microcrusts, which subsequently shed, resulting in the clinical improvement of pigmentation.

Laser treatment intervals usually range from four to six months, to allow any PIH that may develop as a temporary side effect of treatment to subside before assessing the necessity of further treatment. The combined use of a topical triple combination cream and laser treatment, in conjunction with sun protection, appears to be more effective than a mono-therapy approach.

It is important to provide information on the available treatment options and engage the patient on their expectations before embarking on a treatment protocol. This enables the patient to make an informed decision and set a realistic goal for their treatment outcome. Primary care providers should consider referring the patient to a dermatologist when a diagnosis is uncertain, as well as for subsequent management beyond sun protection advice.

PREVENTION

Sun protection is crucial to prevent the development of hyperpigmentation and further deterioration of existing hyperpigmented skin.

Diligent application of sunscreen with a sun protection factor (SPF) of at least 30 – which filters out 97 percent of UV-B radiation – together with a high UV-A rating of PA+++ is advisable.

In addition to sunscreen, physical sun protection should also be used; this includes a wide-brimmed hat, clothing, sunglasses and avoidance of the midday sun between 11am and 3pm.



Dr Liew Hui Min graduated from University of Dundee in Scotland and completed her medical training in the United Kingdom, obtaining her Membership of the Royal College of Physicians in 2007. She further pursued training in dermatology at King's College Hospital in London. Dr Liew's current subspecialty interests include paediatric and women's dermatology.

HELPING PATIENTS AND CAREGIVERS COPE WITH EPILEPSY



Caregivers of children with epilepsy in discussion with KKH Senior Medical Social Worker, Ms Eleen Lim (right).

To provide practical and emotional support to patients with epilepsy and their caregivers, KK Women's and Children's Hospital (KKH) has launched the KKH Children's Epilepsy Support Group.

Epilepsy is common in Singaporean children, with approximately 150 new cases of epilepsy diagnosed each year. Some patients with epilepsy experience recurrent seizures without an immediate cause.

Many children with epilepsy struggle to come to terms with having a chronic disease and the need for long-term medication. Caregivers often worry about the child's safety, future and the cause of the seizures. Many also find the management of the child's long-term needs to be a challenge.

A collaboration by the Neurology Service, Medical Social Work Department, Division of Nursing and Psychology Service

at the hospital, the KKH Children's Epilepsy Support Group aims to equip patients and their caregivers with skills to manage the psychosocial, cognitive and social issues associated with epilepsy.

MAKING A DIFFERENCE IN THE LIVES OF FAMILIES

Guided by a multidisciplinary team of healthcare professionals, the members of the KKH Children's Epilepsy Support Group come together every three months to share their experiences and challenges. They also participate in educational talks and activities aimed at strengthening their knowledge of the condition and empowering them to improve their coping abilities.

"In addition to medical care, a support group can be a valuable resource to help patients and their caregivers cope with and adjust to the challenges of a chronic condition. Connecting with others who are facing similar challenges can help to alleviate feelings of isolation and stress," says Ms Judy Yap, Senior Psychologist, Psychology Service, KKH, who is one of the support group's facilitators.

"The support group has been well-received as an avenue for patients and their caregivers to share their experiences and struggles, and connect with those in similar situations," adds Ms Eleen Lim, Senior Medical Social Worker, Medical Social Work Department, KKH, a fellow support group facilitator. "Being a part of this small community helps to reassure patients and caregivers that they are not alone."

To further educate patients and their caregivers on topics and issues related to living with epilepsy, the KKH Children's Epilepsy Support Group will also be participating in the 10th Asian & Oceanian Epilepsy Congress that will be held in Singapore in August 2014.

For more information about the KKH Children's Epilepsy Support Group, please write to children.epilepsy.supportgroup@kkh.com.sg.

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