

# SPECIAL DELIVERY

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

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A paediatric patient undergoes a sialendoscopic procedure at KKH.

## SIALENDOSCOPY AT KKH

A new treatment approach to manage salivary gland diseases in young children

Dr Dawn Teo, Consultant, Department of Otolaryngology, KK Women's and Children's Hospital

KK Women's and Children's Hospital (KKH) has launched Singapore's first sialendoscopy service to manage and treat salivary gland diseases in children as young as three years.

Traditionally, treatment of recurrent salivary gland infections entails hospitalisation and antibiotics, resulting in frequent and lengthy hospital stays. Sialendoscopy provides a

minimally invasive approach for the diagnosis and treatment of salivary gland diseases, with the added advantages of improved treatment success, shorter hospital stays, decreased need for antibiotics and greatly reduced recurrence of the infection.

Recently introduced to hospitals in Singapore, sialendoscopy is mainly performed on adults and older children for the removal of

salivary gland stones. However, sialendoscopy is also particularly useful to prevent the occurrence of juvenile recurrent parotitis (JRP), which is a common cause of recurring inflammation of the parotid gland (a type of salivary gland), in young children.

### What is sialendoscopy?

During a typical sialendoscopic procedure, miniature endoscopes (0.89mm wide) are used to enter the

### CASE STUDY

#### Sialendoscopy for a three-year-old child with juvenile recurrent parotitis (JRP)

Three-year-old Alice (not her real name) experienced seven episodes of parotid gland infection over the course of a year, characterised by high fever, pain and swelling of her left parotid gland. Over three months, the frequency of infection increased to once every three weeks. Alice was treated with multiple courses of antibiotics, and was admitted to KKH for a week for treatment with intravenous antibiotics, following a particularly severe episode.

Alice was diagnosed as having possible JRP. She underwent a sialendoscopic procedure, and has not experienced a recurrence of parotid gland infection since.

small ducts of the salivary system in search of the cause of obstruction. Using fine instruments manipulated through the working ports of the endoscope, the surgeon can also perform therapeutic procedures such as the dilatation of strictures, biopsies and removal of debris or stones from the salivary gland. This minimally invasive procedure is performed through the salivary duct opening via the mouth, which avoids causing external scarring to the face.

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## SOUTHEAST ASIA'S LARGEST NEONATAL INTENSIVE CARE UNIT AT KKH

Enhanced capacity and facilities to benefit critically ill newborn babies

**KK Women's and Children's Hospital (KKH)** has enhanced its Neonatal Intensive Care Unit (NICU) with greater capacity and new features, to further augment care for newborn babies suffering from serious medical conditions. With an operating capacity of 32 beds, this newly expanded NICU is the largest in Southeast Asia.

Launching the new NICU facility at KKH on 6 July 2013, Minister for Health, Mr Gan Kim Yong, noted that this enhancement of KKH's NICU facilities helps more babies in Singapore to benefit from advanced care, and furthers the hospital's efforts to continually raise the standards of care for patients.

The new NICU at KKH is ergonomically planned, with advanced features and technologies that complement care for vulnerable newborn babies – many of whom are born premature, and can weigh as little as 435grams at birth.

The NICU's closed cubicle layout provides individualised bed space for each baby. Each bed is equipped with a ventilator

and quick access to essential ICU equipment required for monitoring and immediate provision of advanced care for critically ill babies. This includes a dedicated facility to provide extracorporeal membrane oxygenation (ECMO) therapy for babies with reversible cardio-respiratory failure, and a facility for therapeutic hypothermia for babies who suffer brain injury as a result of oxygen deprivation.

The NICU is also self-sufficient, housing facilities to perform major surgeries and procedures on newborn babies, and a dedicated neonatal-surgical unit for babies who are recovering from surgeries or have open wounds, such as colostomies or tracheostomies, which require special care. This minimises the need for, and risks associated with moving these vulnerable babies out of the protected environment of the NICU.

The NICU also contains in-built isolation facilities with negative pressure for babies with contagious infections, and enhanced features such as touch-free opening and closing of doors.

In addition, the new facility has special controls to manage light and sound, keeping them at levels that are comfortable and soothing for sensitive little newborns.

KKH is also the first hospital in Asia to have an MRI-safe incubator, which provides added protection, care as well as comfort for premature babies who require MRI scans.

Associate Professor Victor Samuel Rajadurai, Head and Senior Consultant at KKH's Department of

Neonatology, shared that "KKH's Neonatal ICU is the main referral centre for newborn babies suffering from complex and high-risk medical conditions. It has been managing about 400 to 450 admissions a year, and operating at maximum capacity for a few years."

"With intensive, multi-disciplinary care, including timely surgical interventions, our NICU has achieved a 93 percent survival rate and many babies go on to live relatively normal lives," he added.



## SIALENDOSCOPIC TREATMENT FOR JRP

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### What is JRP?

JRP is a recurrent parotid gland infection caused by the narrowing of the salivary ducts and debris within the parotid duct, resulting in obstruction of normal salivary flow in it. The condition has a worldwide incidence of about one percent, and is the second-most common cause of parotid gland swelling in children, after mumps.

### Symptoms of JRP

The typical child with JRP suffers from multiple episodes of parotitis, which presents with fever, pain and swelling of the parotid gland. Symptoms are usually one-sided, but may affect glands on both sides of the face. JRP can occur at any age between 3 months and 16 years, with a higher incidence among children between the ages of five and seven.

Although JRP may resolve spontaneously at puberty, the child may have to suffer 10 to 15 years of recurrent attacks before it resolves, and may require multiple hospital admissions for intravenous antibiotics to manage the infection. In severe cases, an abscess may form and an incision and drainage may be required, resulting in a cosmetically unappealing scar over the face. This can have an adverse social impact on the child and their family.

### Treatment for JRP

Prior to the advent of sialendoscopy, there was no definitive treatment for JRP to prevent recurrence, except for the removal of the entire parotid gland through a large incision over the face and neck. This procedure carried a significant risk of injury to the nerves supplying the face, resulting in weakness of the face on the affected side. With the introduction of the sialendoscopy service at KKH, minimally invasive intervention can be provided to children as young as three years, sparing them years of hospitalisation and the risk of open surgery.

### When should a physician suspect JRP?

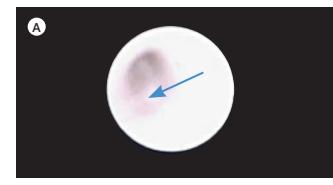
Physicians should consider JRP in a child with recurrent parotid gland infections, especially in the Singaporean context, where most children are vaccinated against mumps, with the majority gaining immunity against mumps for life. The indication for sialendoscopy for possible JRP is at least two episodes of parotid infections in a year.

### Conclusion

In addition to its use for the treatment of JRP, removal of salivary gland stones and dilatation of strictures, sialendoscopy is also useful in the diagnostic evaluation and management of recurrent or chronic salivary gland infection and swelling from causes including autoimmune diseases such as Sjogren's syndrome and systemic lupus erythematosus.



Cannulation of the left parotid duct (indicated by a blue arrow) through the mouth, to allow insertion of miniature endoscopes.



Endoscopic view of the parotid duct. (A) Note the white appearance of the ductal walls and the white debris (indicated by a blue arrow) causing blockage of the salivary duct – characteristic of JRP. (B) The parotid duct free of obstruction post-dilation and removal of debris. Note the branching of the main duct into two secondary ducts.