**Evidence-Based Case Study of Acute Otitis Media with Effusion**

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**Introduction**

Otitis media with effusion (OME) can be one of the two serous resemble mucus or contain serum and is indicated by a non-pus-filled discharge in the middle ear. A typical ailment affecting children, acute otitis media (AOM) is a limited opening erythrogenic process. It is predominantly prevalent in the initial 2 years after birth, attributable to the underdeveloped immunologic moderations and to the structure and function of the Eustachian tube. Damage of hearing ability in children is typically vague, and, at most times, only an audiogram can be used for diagnosis. (Lieberthal, Carroll, Chinmaitree, 2013).

Acute otitis media is characterised by pain (ear ache), loss of normal moderate impulse of eardrum, decreased motility of the eardrum, swollen eardrum, fever experienced in about half the cases, redness of the eardrum, potential hearing loss, commonly correlated with a flare-up of the common colds or upper respiratory tract infections and ear discharge (Infants and Children, 2014).

**Background**

There are two ways that otitis media with effusion is related to ear infections: Subsequent to treatment of nearly all ear infections, in the middle ear fluid, an effusion prevails for a couple of days or weeks, and fragmentary obstruction of the Eustachian tube can lead to development of effusion in the middle ear. Bacteria inside the ear become confined and start to grow, which may result in an ear infection (Mittal, Lisi, Gerring, 2015). Swelling of the Eustachian tube lining that results in elevated levels of fluid can be caused by [allergies](https://medlineplus.gov/ency/article/000812.htm), irritants (especially cigarette smoke), infections to the respiratory systems. In this case, the risk factors were that there was a family history of prevalent ear infections, a greater probability that he had been exposed to allergens and smoke, by which male children are the ones mostly affected, or an allergic inflammation of the nose mucous membranes

**Management**

The study examines the case of Kevin, who is a four-year-old boy who has been transferred to the hospital from a remote community by the family doctor for admission and surgical insertion of bilateral grommets. His condition ensues from a history-recurrent occurrence of acute otitis media with effusion. Kevin and his grandmother have just turned up at the ward. Kevin seems apprehensive; nonetheless, he shows somewhat age-pertinent curiosity in regard to his surroundings; even so, his grandmother is very observant and anxious near the nursing staff, not making eye gaze and is reluctant to interact with nursing staff. She is unwilling to release Kevin’s hand. In his hands, Kevin has a drink bottle that contains cordial. Kevin has initial admission observations of T- 37.4 °C; HR – 86; RR – 26; BP 90/55; and assessment weight, 13.9Kgs; height, 100cms. During the assessment, Kevin is observed as having an established dried exudate and the residues of a currently finalised course of ear drops’ medication contracted in the ears and in localised hair. Additionally, there are profound dental caries affecting his baby teeth. This assignment will evaluate Kevin’s comprehensive requirements, give precedence to the management needed and advance evidence-grounded interventions by utilising a child and family-centred care (CFCC) approach.

**Nursing diagnosis**

Essentially, it was crucial to have a hospitable relationship with Kevin and his grandmother in provision of his healthcare. As a nurse involved in his primary care, it was necessary to utilise a family-focussed approach when assisting Kevin, and his grandmother cope with the distress of surgery. Undertaking age-meticulous preoperative evaluations would assist in establishing and executing a personalised care plan, which, in turn, would facilitate better handling of the agitations of Kevin and his grandmother during the preoperative stage (PS 15, 2016). At most times, parents are perturbed and anxious concerning their child undergoing even a nominally intrusive surgical procedure, and their personal uneasiness may shift to the child. Eventually, the child’s acuity of pain may be elevated; hence, to avoid this, as Kevin’s grandmother was anxious, some fundamental conceptions would be employed, such as communicating to Kelvin in age-suitable expressions and utilising therapeutic play deliberately to reserve his eagerness at a controllable degree in order to achieve a preferable outcome and quick healing. It was additionally crucial to interact and give assurance to his grandmother as the surgery was bound to disorganise Kelvin’s day-to-day routine (Haley, Pillitteri, 2016).

**Preoperative care**

Undertaking preoperative evaluations and giving personalised care is fundamentally significant for paediatric patients. It was also crucial to be observant to attenuated and conspicuous signs; for example, if the patient frowned or shrivelled his body parts; or when the patient distinctly requested for comfort means. It is a prerequisite for the nurse to be sensitive that even if there is lack in visible signs related to certain ways of behaving, that does not signify that the patient is not in discomfort (Klein, Pelton, 2017). Generally, the obligation for a comprehensive evaluation is the individual assessment of each child. To accord the best preoperative care, an environment needed to be established in which Kevin would feel open to pinpoint any disguised fears that he may have attempted to conceal from others. This would assist in developing an endurable and a gratifying, experience. In addition, his grandmother would be provided with information with regard to the patient’s anxiety and regression; for example, that bed-wetting, which is normal for a child during the period. To lessen the fear of the unknown, hospital tours would be provisioned where his grandmother would visit him, be allowed to see, and touch each other. The grandmother would receive counselling on the available options in order to get a knowledgeable consent, care would be provided within the practice purview, complying with every legal obligation and adhering to high standards of professionalism, and recording all care in compliance with obligatory and local specifications (PS 07, 2016).

**Assessment**

**Clinical signs and symptoms**

Diagnosis of acute otitis media necessitates observation of the following triplicate of symptoms, which was clearly observed in the patient: The expeditious outset of symptoms; e.g., pain in the ear, ear tweak, irritability; middle ear effusion as exhibited by a swelling motionless tympanic membrane or fluid at the posterior of the tympanic membrane and acute inflammation, manifested by the tympanic membrane being abnormally red. The presence of a swelling, motionless erythema ear drum has an affirmative prognosticative value of 83-99% (Lieberthal, Carroll, Chinmaitree, et al., 2013).

**Surgical insertion of bilateral grommet(s)**

Myringotomy involves insertion of grommets (tympanostomy tubes or ventilation) that are metallic or plastic tubes that are small in size via the tympanic membrane (eardrum), following myringotomy, a process that comprises making a small incision in the eardrum and extracting fluid in the middle ear (Wallace, Berkman, Kathleen, 2014). The logic for inserting a grommet is to inhibit a build-up of fluid in addition to assisting in regulating the pressure in the middle ear. The surgery would take place in about 20 minutes, subject to a general anaesthetic rationale being that the patient was a child. After insertion, the grommets were to be left in place for, generally, about 6 to 12 months before extraction, leaving the eardrum to heal inherently (Insertion of Grommet(s), 2017).

Guidelines on anaesthesia practice serve as a reference to reduce the risks related with pharmacology administration, which outlines the advantages of sedation when it is administered by qualified providers. Safety requirements obligate that regular assessment be done to monitor for distinctive reactions and uncontrolled sedation, including a respiratory decline and underpin to his grandmother that the changes in Kelvin’s character, actions, and inclination are the appropriate reactions of the medication and were not reasons for any apprehension. During surgical operation, anaesthesia inhibits children from remembering real surgical incidents. Nonetheless, he would be put through nerve-racking experiences preoperational, such as the admission procedures, drawing of blood, administration of injections, or provision of other medications. However, as a result of preoperative preparation, Kelvin’s coping potentiality would be heightened and uneasiness alleviated. (Lemos, Peniche, 2016).

**Evaluation: Postoperative notes and orders**

On discharging Kelvin to the ward, the following were documented with the correct modifications: vital signs, a pain-management plan, ratio and description of intravenous fluid, a proportion of urine and gastrointestinal fluid, additional medications and laboratory analysis (Rosenfield, Shin, Schwartz, 2016). Observation of the patient’s development is a prerequisite and encompassed the following: a remark on medical and nursing examinations, a specific, detailed remark on the wound or operation area, any complications and any treatment adjustments (World Health Organisation, 2018). Evaluation for the existence, or risk of any category of pain, was done during admission or visit with a health-care practitioner; after the diagnosis that the patient was infected with otitis media with effusion and before, during and subsequent to a procedure.

**Involvement of the interdisciplinary team in child- and family-centred care**

The family physician was a point of first contact when the grandmother probably discovered that Kelvin’s ear was infected. The physician arranged the referral for a more specialised care and would serve as a continuing point of contact after the surgery for constant check-ups. The ENT specialist carried out direct intervention by diagnosing the condition and performing the surgery. Laboratory technicians assisted i important diagnostic procedures requested. A clinical psychologist assisted in providing counselling for Kelvin and his grandmother. At all stages of his care, a clinical nurse played a central part of keeping the process moving forward, delivering specific services and support, and providing the substance and structure of the entire care process. The hospital clerk or an expert in electronic information systems was involved in gathering, processing and availing the required information to Kelvin’s grandmother. An anaesthetics nurse was present during the surgery to administer the general anaesthesia and a registered nurse to monitor his vitals when he was under.

**Discharge note**

On discharging the patient from the ward, it was a prerequisite to provide the following documented notes: a prognosis on admission and discharge, a synopsis of itinerary in hospital, instructions concerning additional management, inclusive of prescribed medications and making certain the patient or family is given a copy of this information, in addition to the particulars of subsequent appointment.

**Medication subsequent to grommet insertion surgery:**

Pain Management: A lot of patients do not feel pain; however, since the patient experienced some mild discomfort, this was to be managed by using pain medication, such as paracetamol. For this surgery, antibiotics are not generally prescribed; however, it was necessitated to prescribe antibiotic eardrops, inclusive with directions from the ENT specialist (Javed, Van, Waddell, 2015).

**Potential comorbid complications and extended care education.**

**Postoperative care of the ear:**

Water Precautions: the ears are required to be kept dry up till removal of the grommet(s); the reason being is that, in the case that water enters the ear canal, it may get into middle ear through the grommet(s), resulting in an infected/discharging ear. During the customary shower, the use of waterproof ear plugs, such as silicon plugs, was recommended. Conventional cleaning of the ear plugs was to be done subsequent to usage with water and soap and to accommodate drying for the next use. In the case that the patient wanted to swim, the ear plugs were required to be upheld with either a cap or headband. Resumption to normal activities: It was a prerequisite that the child be absent from school for approximately 1-2 days/weeks to enable an exhaustive recovery. In addition, swimming pool activities/lessons were to be avoided until the postoperative appointment with the ENT specialist. Afterwards, these activities would be resumed but only when using suitable swimming ear plugs and a headband or cap, with instructions for no under diving (Wallace, Berkman, Lohr, 2014). The child was to be taken to nearest Emergency Department or Local General Practitioner Clinic if there was an occurrence of an ear infection (discharge), pyrexia, or persistent pain that did not react to the prescribed analgesics. Additionally, if any advice was required, his doctor was to consult the ENT specialist (SA Child Health Clinical Network, 2017).

Kelvin’s Postoperative Appointment: An otoscopy would be performed to inspect the grommet(s); he was required to undergo a hearing test before the appointment and a copy of the results brought during the appointment; subsequent to this appointment, Kelvin would be discharged for continuous check-ups by the GP (Steele, Adam, Di, 2017).

**After care of the grommets**

Bleeding: This may happen occasionally, especially when the grommets have been in position for some period. This may be distressing, but, in most cases, it is, rarely, a serious issue. It is typically analogous with infection and the development of a small lump of sensitive granulation tissue at the area where the grommet is. If any of these instances transpired, it would require treatment with antibiotic eardrops and, in many cases, extraction of the grommet (Halley, Pillitteri, et al., 2016).

**Discharge/Infection:**

If the patient, after insertion of the grommets, would experience discharge from the ears as a result of water entering the ears or from an infection of the upper respiratory, antibiotic eardrops; e.g., Ciproxin HC® or Ciloxan®, which are risk-free and most potent, would be prescribed (Syed, Suller, Browning, 2013).

**Extrusion:**

After about 6-9 months, the grommet(s) will be taken out. Kevin and his grandmother were urged to adhere without failing to follow all the instructions given by the ENT specialist as long as the grommet(s) were in place. Kevin was also required to visit his doctor for examination and evaluation every 4 months or earlier if he experienced ear infection or hearing loss (Lieberthal, Carroll, Chinmaitree et al., 2013).

**Conclusion**

Utilising the CFCC approach to developing Kelvin’s care plan ensured his safety and a preferable outcome. In addition, it promoted partnership between Kevin, his grandmother and all the caregivers. The approach focussed on comprehensive and unbiased information; enhanced communication; patient advocacy; dignity and respect; direct participation and satisfaction for Kelvin and his grandmother. The treatment also ensured that various complications related to acute otitis media were averted such as: brain abscess, neck abscesses, lateral sinus thrombosis mastoiditis, labyrinthitis, facial nerve paralysis, and meningitis. This was, in general, the preferred outcome for Kelvin’s care.

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