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Post Tonsilloadenoidectomy Change in Body Weight, Body Fat and Body Water in Children

Ivana Pajić Matić[1], Tomislav Stojadinović[1], Ivo Matić[2], Siniša Maslovara[1], Karolina Veselski[2] and Josip Samardzic[2]

Abstract

Despite the advances in anesthetic and surgical procedures that avoid painful manipulation, the main complications after tonsilloadenoidectomy are still haemorrhage and pain but also weight loss, dysphagia, dehydration, vocal changes and anesthetic complications. Weight loss in children in early postoperative period after tonsilloadenoidectomy which is often seen as complication has been assessed by the study in the article „Change in body weight, body fat and body water in children after tonsilloadenoidectomy".

Keywords: Tonsilloadenoidectomy; Dehidration; Tonsillectomy

Background

There are worldwide used guidelines that strictly define indications for tonsillectomy and adenoidectomy. The most common indications for tonsillectomy are obstructive sleep apnea (OSA) and recurrent tonsilitis (RT) [1]. In Croatia we use national guidelines from Interdisciplinary Section for Antibiotic Resistance Control (ISKRA) which are divided into absolute indications (sore throat caused by tonsillitis which meets the following conditions: five or more episodes of sore throat per year or tonsillitis which is diagnostically confirmed by Centor criteria, complications of tonsillitis such as peritonsillar abscess and sepsis, permanent airway obstruction, obstructive sleep apnea syndrome (OSAS) and suspected malignant process in tonsils) and relative indications (occlusion disorders and chronic tonsillitis) [2]. These conditions are important to treat, especially OSA, because if untreated, it can be associated with behavioral disorders or cardiovascular complications [3].

Tosilloadenoidectomy

ADD this Precisely because of this often seen weight loss as complication in the early postoperative study by the article " Change in body weight, body fat and body water in children after tonsilloadenoidectomy assessed what was the cause of this weight loss in children.

Very often, after tosilloadenoidectomy, we saw weight loss in the immediate postoperative period, especially among the children. Exposure of the submucosa brings about pain by irritating the sensory terminations exposed dependent on the lingual and glossopharyngeal nerves. It is often poorly tolerated, leading to decreased oral food intake, caused by the resulting sore throat. Precisely because of this often seen weight loss as complication in the early postoperative period, the prospective study by the article "Change in body weight, body fat and body water in children after tonsilloadenoidectomy" assessed what was the cause of this weight loss in children. The named article study included 31 patients aged 6-22 years; the median age of the patients was 9. All the patients underwent tonsilloadenoidectomy performed by two surgeons and the used surgical technique was cold steel. Postoperatively, regular analgesic therapy was administered (Paracetamol i.v.15 mg/kg every 6 h). Pain assessment was done by use of visual analog scale (VAS) every 2 hours during postoperative period and noted in specially designed questionnaires. Patients were only hydrated by administering fluid enterally with no parenteral intake. During the study, children were weighed before tonsilloadenoidectomy, 24 hours after tonsilloadenoidectomy and the seventh postoperative day where age, height, weight, body fat, body mass index (BMI), muscle mass and body water were measured. Data analysis revealed a significant reduction in mass, body fat, body mass index (BMI) and muscle mass in the children up to 10 years of age, as well as in the children that were 11 years and older. In children up to 10 years of age, there was no significant change in body water (%), while body water in the group of patients aged 11 and over was significantly higher on the seventh postoperative day. In the total sample, there was a significant decrease in body weight, body fat (%), body mass index and muscle mass, while there was a significant increase in body water. There is no significant correlation between pain intensity and individual parameter change in all subjects, nor in age groups. By reviewing the literature we found several studies related to this topic. There were previous studies that investigated role of tonsilloadenoidectomy and weight gain in children, one of them is study of the Dutch birth cohort that found correlation between tonsilloadenoidectomy made in children between ages of 0 and 7 years which resulted in overweight or obesity by age 8 [5]. According to the study of Smith et al., tonsilloadenoidectomy has been associated with weight gain which is variable and age dependent and happens late, even few months after surgery [6]. Most of these studies made direct correlation between weight gain and tonsilloadenoidectomy, but the answer why do the children lose weight in early postoperative period was not a frequently seen topic of studies. It is well known that the majority of operative procedures are usually associated with suturing and primary healing of the wounds, after tonsillectomy the wound heals secondary which causes more pain [7]. As mentioned, pain is usually caused by irritating the sensory terminations

***Corresponding author:** Ivana Pajić Matić, Department of ENT and anesthesiologist, "General Hosiptal " Dr Josip Benčević" Slavonski Brod, Croatia, E-Mail: ivanapp123@gmail.com; Tel. 0038535 445 643

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on the lingual and glossopharyngeal nerves but sometimes also dependent on surgical technique that was used to perform the procedure. It is most likely that in the early postoperative period after tonsilloadenoidectomy, odynophagia and dysphagia are important factors that cause decreased oral food intake, reduced oral hydration and consequently weight loss. According to the Lawlor et al. For evaluating dehidration the gold standard is percentage of body weight loss [8]. Water is the main component of the body, distributed in the extracellular and intracellular compartments. 75% of the muscle mass is water which plays an essential role in muscle repair and muscle growth, since it's crucial for protein synthesis. Due to poorly hydration muscle loses its weight, since muscle cells don't have enough water inside them. Drinking water helps provide electrolytes for muscle cells [9].

Good hydratation, especially among children up to 10 years old in early post tonsilloadenoidectomy period is important to keep muscular mass and power and helps to prevent weight loss.

Conclusion

In children after tonsilloadenoidectomy, in the early postoperative period, weight loss is often seen as complication, which is mostly shown by loss of muscle mass as we can see by the results of study in the article Change in body weight, body fat and body water in children after tonsilloadenoidectomy". Based on this, the main conclusion is that good hydration is a key to keep muscular mass, muscluar power and help to prevent weight loss, especially among the children after tosilloadenoidectomy.

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Author Affiliations Top

[1]*ENT specialist, Slacanski Brod, Croatia*

[2]*Anesthesiologist. Slavanski Brod, Croatia*