Analysis of Sialocele and Salivary Fistula in Post-Parotidectomy Patients

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Abstract

Objective: The objective of this study is to determine the incidence, risk factors, and management of sialoceles and salivary fistula after parotidectomy.


Results: The incidence of sialocele and/or fistula in 65 patients was 21.4%. A salivary fistula was seen in 28% of patients that had a complete superficial parotidectomy, and 5% of patients that had a partial parotidectomy (p<0.05). The pathology of the tumor, duration of drain placement, the volume of gland removed, or the use of Alloderm were not strongly associated with the formation of a sialocele. On average, sialoceles and fistulas persisted 24 days.

Conclusion: Sialoceles and salivary fistulas are a complication of parotid surgery that appear to occur more frequently with removal of the entire superficial lobe of the parotid. Resolution tends occur in approximately one month.

Introduction

Sialocele and salivary fistula are well-known complications of parotid surgery. The incidence has ranged from 4-44% in the literature. Though typically self-limited and not life-threatening, sialocele and salivary fistula do add significant morbidity for the patient, and can cause significant pain and discomfort. Most fistulae resolve without intervention, though they may persist for many weeks. Many forms of treatment have been described including observation, pressure dressing, packing, drain placement, botulinum toxin, total parotidectomy and radiation therapy, all with varying degrees of success. Despite being a relatively common complication, it is not clear what factors contribute to their occurrence. The purpose of this study is to review our experience with sialoceles and salivary fistula after parotidectomy, including the incidence, predisposing factors, time course, treatments employed, and their effectiveness.

Material and Methods

Single institution, multiple surgeon retrospective review of patients undergoing parotid surgery reviewed over a three year period (2006-2009). A sialocele was defined as a painful swelling that worsened with mastication, and persisted after needle aspiration. A salivary fistula is defined as postoperative drainage that is persistent (> 1 week) and/or is amylase positive. Factors that were examined included tumor pathology, type of parotidectomy performed (partial lobectomy, complete superficial parotidectomy, total parotidectomy, and radical parotidectomy), the type of drain placed, the duration of drain placement, the volume of the specimen, and the duration of the sialocele or fistula. Patients that required neck dissection, skin resection, regional or microvascular flap reconstruction, or temporal bone resection were excluded. Surgeries were classified as a partial lobectomy (dissection and removal of tissue over either the upper or lower division of the facial nerve), complete lateral lobectomy (dissection and removal of tissue over both the upper and lower division), deep lobe parotidectomy, radical parotidectomy, or a students t-test and Fisher exact test were used to determine significance.

Results

65 patients were found to meet inclusion criteria for the study. 86% of tumors were benign, the most common tumor being pleomorphic adenoma (47%), followed by Warthins tumor. The most common malignant tumor was mucoepidermoid carcinoma (6%). Most patients had a complete lateral lobectomy (58%), followed by a partial lobectomy (35%), and then a deep lobe parotidectomy (8%). The incidence of sialocele and/or fistula in 65 patients was 21.4%. A salivary fistula was seen in 28% of patients that had a complete superficial parotidectomy, and 5% of patients that had a partial parotidectomy (p<0.05) (Table L2). The pathology of the tumor, duration of drain placement, the volume of gland removed, or the use of Alloderm were not strongly associated with the formation of a sialocele. On average, sialoceles and fistulas persisted 24 days. A variety of treatment methods were employed including aspiration, drain placement, the use of oral scopolamine, and pressure dressings (Table 3). None of these methods appeared to significantly reduce the duration of the drainage or resolve the sialocele.

Discussion/Conclusion

The incidence of sialocele in this study was found to be 21%, which is consistent with what is reported in other studies. A myriad of factors were examined to determine if a correlation existed with sialocele formation, but the only factor that achieved statistical significance was the type of parotid surgery performed. Patients undergoing a complete dissection of the superficial lobe of the parotid had a significantly higher rate if salivary fistula formation. This finding is contrary to what has been reported in previous studies which showed a higher rate of sialocele with a partial lobectomy. Though the reason for the association with extent of surgery is unclear, it is possible that as a larger surface area of the gland is exposed, there is a greater accumulation of saliva, leading to a higher propensity of sialocele formation. The higher rate of sialocele formation in patients undergoing a deep lobe parotidectomy is also suggestive of this reasoning, but this did not approach statistical significance given the low number of patients undergoing this procedure.

The type of treatment did not seem to hasten resolution of the sialocele, though the power of this portion of the study was low. A prospective study or larger sample size would be necessary to answer this question. Other limitations of this study are primarily due to its retrospective nature.

In conclusion, sialoceles and salivary fistulas are a relatively common occurrence after parotid surgery. They appear to occur more frequently with removal of the entire superficial lobe of the parotid compared.

Resolution tends occur in approximately one month. At present, no therapy has been shown to prevent their occurrence.

References