International Journal of Pediatric Otorhinolaryngology (2008) 72, 81–87

ELSEVIER

International Journal of Pediatric Otorhinolaryngology

www.elsevier.com/locate/ijporl

Intralesional steroid injection for proliferative parotid hemangiomas

Lisa M. Buckmiller [a], Carrie L. Francis [b,*], Robert S. Glade [c]

[a] *Vascular Anomalies Center, University of Arkansas for Medical Sciences, Arkansas, Children's Hospital, Little Rock, AR, USA*
[b] *University of Arkansas for Medical Sciences, Department of Otolaryngology-Head and Neck Surgery, Little Rock, AR, USA*
[c] *Arkansas Children's Hospital, Department of Otolaryngology-Head and Neck Surgery, Little Rock, AR, USA*

Received 5 July 2007; received in revised form 20 September 2007; accepted 23 September 2007

KEYWORDS
Hemangioma;
Steroid injection;
Parotid;
Vascular anomalies;
Birthmark

Summary

Objective: To evaluate the efficacy of proliferative phase intralesional steroid injections in the treatment of parotid hemangiomas.
Design: Retrospective analysis of pediatric patients with parotid hemangiomas treated with intralesional steroid injections during the proliferative phase.
Setting: Vascular Anomalies Center, University of Arkansas for Medical Sciences, Arkansas Children's Hospital, Little Rock, Arkansas, USA.
Patients: Twenty-one pediatric patients, ages 4–39 months.
Methods: Between 2001 and 2006, 21 patients received steroid injections for 23 parotid hemangiomas (bilateral in 2 patients). A total of 1–3 injections over the first year of life were given at 6–25 week intervals.
Results: Main outcome measures included softening, decreased growth rate, and/or decrease in size. After injection, achievement of outcome measures occurred with all lesions. No incidence of tissue atrophy or facial nerve injury was seen. Four of 21 (19%) patients developed failure to thrive (FTT).
Conclusion: Parotid hemangiomas can be effectively controlled with proliferative phase intralesional steroid injections. Injections may limit the need for future extensive surgery. Further prospective randomized trials are needed to support these claims. Failure to thrive may be a potential complication of intralesional steroid injection. Endocrine/growth monitoring should be considered when treating with intralesional steroids.

* Corresponding author.
E-mail address: clfrancis@uams.edu (C.L. Francis).

0165-5876/$ – see front matter © 2007 Published by Elsevier Ireland Ltd.
doi:10.1016/j.ijporl.2007.09.024

1. Introduction

Hemangiomas are the most common tumor of infancy, occurring in up to 2.6% of neonates and 12% of children under 1 year of age [1,2]. Classically, they present shortly after birth as a light pink cutaneous stain or area of hypopigmentation, followed by a 10—12 month phase of rapid proliferation. During proliferation cutaneous involvement reddens while the deeper lesion often becomes markedly raised. Proliferation is followed by a variable involutional phase which is complete in 60% of children by age 4 and 76% by age 7 [3]. During the involutional phase, the characteristic red cutaneous discoloration fades to more normal skin tones, whereas deeper components shrink and become fibrofatty tissue [4]. Despite involution, larger hemangiomas often leave a patient with severe deformity characterized by skin redundancy, excessive deep fibrofatty tissue, dermal atrophy and scarring. Consequently, intervention for larger hemangiomas is often performed subsequent to the involutional phase in order to eliminate severe deformity and consequent psychosocial trauma.

Hemangiomas of the parotid gland present a unique challenge as they are notorious for large growth and have been reported to be resistant to treatment [5]. Also, due to the proximity of the facial nerve, surgical removal of these lesions is arduous and potentially morbid, risking facial paralysis. It therefore becomes important and advantageous to control the growth of parotid hemangiomas during the proliferative phase in order to diminish the development of disfiguring fibrofatty tissue which may require parotidectomy to correct facial asymmetry.

2. Methods

A retrospective chart review was performed on all patients from January 2001 to December 2006 seen in the Vascular Anomalies Center at Arkansas Children's Hospital who received intralesional steroid injections for parotid hemangiomas. Each injection contained 1 cm^3 triamcinolone (40 mg/cm^3) and 1 cm^3 betamethasone (6 mg/cm^3) mixed in a 3 cm^3 syringe. With a 27 g needle, the injections were performed via a single puncture site through which several passes into the hemangioma were made, infiltrating the tumor fashion. For larger lesions, the entire 2 cm^3 mixture was injected. This included the majority of lesions. For a few smaller lesions, only a portion of the triamcinolone/betamethasone mixture was injected. The amount injected was determined per surgeon discretion. Injections were performed either in the clinic or the OR (in conjunction with laser treatment). Many patients (16 out of 21) were from a state other than Arkansas, making long term follow-up difficult. Photo documentation of results was obtained for the majority of patients either at clinic follow-up or via email.

3. Results

A total of 21 patients received intralesional steroid injections for 23 parotid hemangiomas (bilateral in 2

Fig. 1 Patient G: Right side treated with steroid injections only left side steroid injections and parotidectomy, age 6 months after 1 injection, age 2.5 years, respectively.