International Journal of Pediatric Otorhinolaryngology 81 (2016) 5–9

Contents lists available at ScienceDirect

International Journal of Pediatric Otorhinolaryngology

journal homepage: www.elsevier.com/locate/ijporl

The validation of an algorithm for the management of paediatric cervical lymphadenopathy

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ARTICLE INFO

Article history:
Received 29 July 2015
Received in revised form 25 October 2015
Accepted 27 November 2015
Available online 7 December 2015

Keywords:
Paediatric
Cervical
Lymphadenopathy
Neck
Node
Biopsy

Introduction

Neck lumps are common in children, with cervical lymphadenopathy being the most frequent cause [1,2]. Infective or inflammatory lymphadenitis is attributed as a potential cause of lymphadenopathy through all stages of childhood [3]. The majority of enlarged nodes are reactive and malignancy is rare. When presented with a child with a neck lump the clinician must exclude malignancy but should not over investigate or perform unnecessary procedures.

It was apparent at our unit that children with neck lumps were being seen at most of the ear, nose and throat clinics. The patients were being seen by different grades of doctor including consultant, registrar and more junior doctors with senior supervision. The management often varied between patients, and depending on who had seen them a variety of blood tests and investigations were performed. The patients frequently had multiple clinic attendances and the biopsy rate was thought to be high. It was also suggested that multiple clinic attendances may be adding to a delay prior to biopsies being performed. There was a clear need for a cohesive strategy for the management of these patients.

A review of the literature suggested specific symptoms, signs and investigations which could help the clinician decide whether to discharge a patient, investigate further or perform a biopsy of a lymph node [4]. Larger nodes have been associated with malignancy along with supraclavicular nodes, hepatosplenomegaly and a history of malignancy [5–9]. Abnormal chest X-ray and suspicious features on ultrasound have also been associated with malignancy [10,11]. However, given the large range in sensitivity and specificity it should not be relied upon in isolation for diagnosis [11–13]. Serology including Epstein–Barr Virus (EBV), Cytomegalovirus, Toxoplasma and Bartonella has been shown to help diagnose infective cases and therefore exclude malignancy [14–16] and a full blood count has been shown to be abnormal in some malignant cases [5]. Fine needle aspiration cytology (FNAC) has a high specificity of between 92% and 100%, however sensitivity varies between 67% and 100% [17–27]. As a result, FNAC cannot be relied upon in isolation to exclude malignancy in children. Excisional node biopsy is the gold standard but this has an associated morbidity [28].

This review led the authors to the production of a treatment algorithm [4]. Currently we are not aware of any other prospective studies of evaluation of treatment protocols. We prospectively audited the use of the treatment algorithm over a 12 month period to validate the algorithm in the ear nose and throat department of the Royal Hospital for Sick Children, Glasgow.

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http://dx.doi.org/10.1016/j.ijporl.2015.11.034

Material and methods

All new patients referred with a neck lump between August 2008 and July 2009 were seen at a dedicated neck lump clinic at the Royal Hospital for Sick Children, Glasgow. If a diagnosis of cervical lymphadenopathy was confirmed then the treatment algorithm shown in Fig. 1 was followed.

On the first visit, a full history was taken and examination was performed. The neck lump was measured with callipers.

If the node was small, less than 1 cm, or fluctuating in size without any other concerning features then the patient was discharged.

If the node was greater than 2.5 cm, or there were supraclavicular nodes or a history of previous malignancy then a lymph

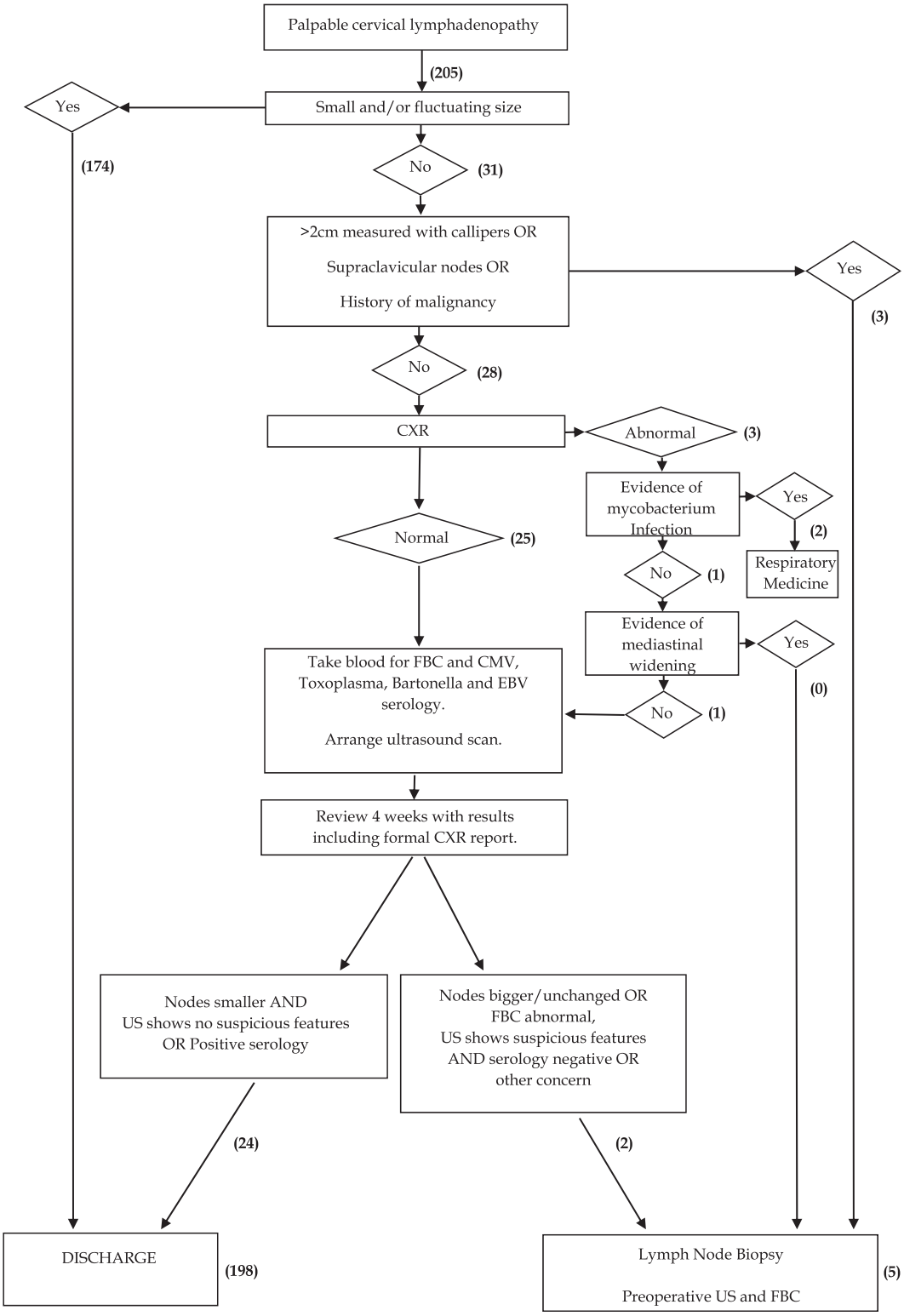

Fig. 1. Management algorithm for paediatric cervical lymphadenopathy. The number of patients in each limb are presented to the right hand side in brackets.