



Imaging of the Infrahyoid Neck: Systematic Approach

SHORT ABSTRACT

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ABSTRACT

In this presentation a systemic approach to infrahyoid neck imaging analysis is presented based on five individual spaces: the visceral, carotid, retropharyngeal, posterior cervical and perivertebral space. These spaces are defined by the three layers of the Deep Cervical Fascia (DCF). Each space has its own specific anatomical 'contents'. Therefore, once a disease process is assigned to one space, it is usually possible to formulate a short differential diagnosis based on the anatomy present in that space.

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INTRODUCTION

Traditionally, the anatomy of the infrahyoid neck is described using anatomical ‘triangles’, such as the anterior and posterior triangle. While this approach is useful for surgeons, radiological analysis much more depends on the axial plane. Harnsberger has popularized the so-called spatial approach, which is an alternative based on anatomical compartments (spaces) [1]. This approach is well suited for the analysis of (predominantly) axial computed tomography (CT) and magnetic resonance (MR) images used by radiologists.

SPATIAL APPROACH

The infrahyoid neck can be divided in five individual spaces: the visceral, carotid, retropharyngeal, posterior cervical and perivertebral space (See Figure 1). These spaces are defined by the three layers of the Deep Cervical Fascia (DCF). Normally, these layers of the DCF are not visible on imaging. The spaces constitute natural barriers against the (early) spread of disease. Each space has its own specific anatomical ‘contents’. Therefore, once a disease process is assigned to one space, it is usually possible to formulate a short differential diagnosis based on the anatomy present in that space.

SYSTEMATIC APPROACH

For the analysis of a swelling in the infrahyoid neck on CT or MR, the following three steps are necessary:

1. localize; 2. remember; and 3. use radiologic pattern recognition.

Step 1: Localize. In which of the five spaces is the lesion located?

Step 2: Remember. What are the normal anatomical contents of that space?

Step 3: Which pathology may have arisen from the normal anatomy of the involved space? Is there a specific radiologic pattern? Does this fit the clinical information?

The systematic approach will be discussed using cases from daily practice.

COMPETING INTERESTS

The author has no competing interests to declare.

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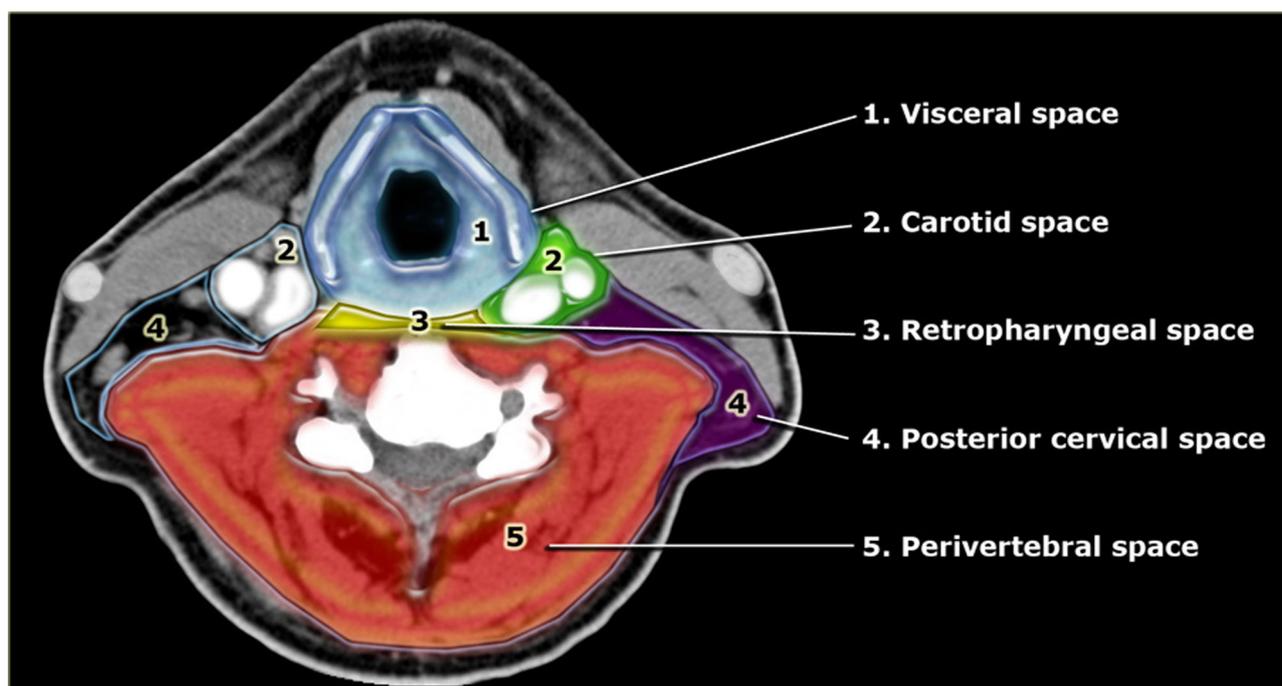


Figure 1 Infrahyoid neck: spaces defined by the deep cervical fascia. (with permission from: www.radiologyassistant.nl).

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