

ANATOMO-TOPOGRAPHIC FEATURES OF LYMPH NODES OF THE SIGMOID COLON IN CHILDREN

Nazhimov Shokhboz Rahimjonovich. Assistant Trainee

Propaedeutics of Childhood Diseases.

Samarkand State Medical University

Samarkand, Uzbekistan

Abstract: The article investigates the topography of lymphatic vessels and nodes of the sigmoid colon in children under 3 years of age using the method of injecting Gerota's dye into the lumen of lymphatic vessels. From lymph nodes of various locations on the anterior and posterior surfaces of the sigmoid colon, 1–3 (most often 1–2) efferent lymphatic vessels emerge, with lengths varying from 3 to 5 mm and diameters ranging from 0.14 to 0.17 mm. In 95% of cases, the number of afferent lymphatic vessels entering the nodes on the anterior and posterior surfaces of the organ exceeded the number of efferent vessels, while in 5% of cases their numbers were equal.

Keywords: children, sigmoid colon, lymphatic vessels, lymph nodes, topography, anatomy

АНАТОМО-ТОПОГРАФИЧЕСКИЕ ОСОБЕННОСТИ ЛИМФАТИЧЕСКИХ УЗЛОВ СИГМОВИДНОЙ КИШКИ У ДЕТЕЙ

Нажимов Шохбоз Рахимджон угли. Стажер-ассистент

Пропедевтика детских болезней.

Самаркандский государственный медицинский университет

Самарканд, Узбекистан

Резюме: В статье изучена топография лимфатических сосудов и узлов сигмовидной кишки у детей до 3 лет методом инъекции краски Герота в просвет лимфатических сосудов. Из лимфатических узлов различной

локализации передней и задней поверхности сигмовидной кишки выходит 1–3 (чаще 1–2) выносящих лимфатических сосуда, длина которых варьирует от 3 до 5 мм, а диаметр — от 0,14 до 0,17 мм. В 95% случаев количество приносящих лимфатических сосудов узлов передней и задней поверхности органа преобладало над количеством выносящих, а в 5% случаев их число было равным.

Ключевые слова: дети, сигмовидная кишка, лимфатические сосуды, лимфатические узлы, топография, анатомия

Introduction. In the structure of oncological morbidity, colon cancer steadily occupies one of the leading places after lung cancer and breast cancer [1,2]. The question of the technical feasibility, safety, and oncological effectiveness of laparoscopic mesocolonectomy with D3 lymph node dissection in the treatment of cancer of the left half of the colon requires study using evidence-based medicine methods [3,4]. To date, neoadjuvant therapy in patients with rectal cancer is considered a standard treatment method. It is very important to affect the regional lymph nodes [5,6]. There is no doubt that metabolites secreted by tumor cells have an irritating effect on lymphoid tissue and cause a response reaction in it. Structural and functional disorders of regional lymph nodes precede the appearance of new metastases [7].

Study Objective. To study the anatomo-topographic features of the lymph nodes of the sigmoid colon in children.

Materials and methods. The study was conducted on 30 specimens of the sigmoid colon excised from cadavers of newborns (10), infants (10), and young children (10) of both sexes who died from diseases not related to lesions of the digestive organs or the lymphatic system. Using the method of interstitial injection of oil-based dye prepared according to the type of Gerota's mass, introduced into the thickness of the subserosal layer of the intestine, the anatomy and topography of the lymphatic vessels and nodes of the sigmoid colon were studied.

Results. The studies showed that the lymph nodes of the sigmoid colon are located in front of the organ (on its anterior surface) and behind the organ (on its posterior

surface) and are grouped near the free muscular taenia in the thickness of the omental appendices; between the free muscular taenia and the mesenteric border of the intestine, as well as near the mesenteric border of the intestine. Lymph nodes of the sigmoid colon located on the anterior surface (near the free muscular taenia) were found in newborns in only 1 case; in infants in 4 cases, and in young children in 9 cases. Lymph nodes lying between the free muscular taenia and the mesenteric border of the intestine were found in newborns in 1 specimen, in infants in 3 cases, and in all 10 studied specimens in young children. In newborns, lymph nodes between the free muscular taenia and the mesenteric border were not found at all; in infants – in 3 cases, and in young children – in 9 cases. Lymph nodes located near the mesenteric border of the intestine were present in newborns in 8 cases, in infants – in all examined specimens, and in young children – in 6 cases. The number of lymph nodes lying near the free muscular taenia on the anterior surface of the intestine was 5 in newborns; in infants ranged from 3 to 8 (in 60% – 4–6), and in young children from 1 to 3 (in 52% – 2–3). The number of nodes between the free muscular taenia and the mesenteric border was 3 in newborns; in infants ranged from 2 to 5 (in 55% – 3–4), and in young children from 1 to 5 (in 64% – 2–4). The number of lymph nodes localized near the mesenteric border varied: in newborns from 1 to 7 (in 70% – 3–5), in infants from 1 to 5 (in 59% – 2–4), and in young children from 1 to 6 (in 54% – 2–5). The number of lymph nodes on the posterior surface of the sigmoid colon located near the free muscular taenia was 2 in newborns; in infants from 3 to 9 (in 64% – 4–7), and in young children from 3 to 6 (in 55% – 4–5). Nodes lying between the free muscular taenia and the mesenteric border were not detected in newborns at all. In infants, the number of nodes in this location ranged from 2 to 3; in young children from 1 to 5 (in 57% – 2–4). The number of lymph nodes near the mesenteric border varied: in newborns from 1 to 5 (in 57% – 3–4), in infants from 1 to 7 (in 66% – 3–4), and in young children from 4 to 6 (in 68% – 3–5). On the anterior and posterior surfaces of the organ, the number of detected lymphatic vessels in newborns ranged from 2 to 12 (most often 4–8), in infants from 2 to 10 (most often 3–7), and in young children

from 2 to 8 (most often 3–6). Their diameter varied from 0.12 mm (newborns) to 0.17 mm (young children). Lymphatic vessels of the anterior and posterior surfaces of the organ equally drained into nodes lying near the free muscular taenia (15%), into nodes between the free muscular taenia and the mesenteric border (35%), and into nodes near the mesenteric border (50%). Accordingly, the length of the lymphatic vessels varied (from 3 to 10 mm).

Conclusion. From lymph nodes of various locations on the anterior and posterior surfaces of the sigmoid colon, 1–3 (most often 1–2) efferent lymphatic vessels emerge, with lengths ranging from 3 to 5 mm (in 72% – 3–4 mm) and diameters from 0.14 to 0.17 mm. In 95% of cases, the number of afferent lymphatic vessels to the nodes of the anterior and posterior surfaces of the organ exceeded the number of efferent vessels, while in 5% of cases their numbers were equal.

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