

## 臍頭十二指腸領域から大動脈周囲に至るリンパ路について

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### 背景

胎児に色素注入法を用いたリンパ管系の研究（例えば1960年前後の熊本・忽那門下の業績）では、腸リンパ本幹が明確に観察・記載されていた。永井や谷川らの所見でも明瞭である。しかしその後、腸リンパ本幹の記載は途絶えている。

### 材料と方法

解剖実習用に通常処置された成人解剖体において、臍頭十二指腸後面の生理的癒着を剥離し、リンパ管系の発達が適当な20体を選んだ。灰紫がかった褐色のリンパ凝集が管内を満たしていることを指標に、リンパ管を観察・記載した。以上の他、通常の解剖実習体100体において胸管起始部を観察した。

### 所見

腹腔動脈・上腸間膜動脈の右側左側それぞれにリンパ管の下行路があった（Fig. 1）。左右いずれも、腹腔神経叢より浅く太い経路と深く細い経路に分類できた。浅い（深い）右側経路は8p, 12p, 13（7, 12p）に始まり、浅い経路は全例で観察された。臍頭後面と肝十二指腸間膜後面では、リンパ節に始まるようには見えないリンパ管もこの浅い右側経路に集まっていた。左側の浅い経路は7, 8a, 11, 14, 17に始まり、半数以上で観察された。以上の3経路は16b1に注いだ。しかし、左側の深い経路は7から始まり、短い経過で16a1ないし16a2に注いでいたが、明瞭な例は少なかった。以上のリンパ管が直接に胸管に連絡する例を1例（浅い右側経路）だけ認めた。また90%の個体において、16b1-interと16b1-lateroからそれぞれ始まる根が合流して胸管が形成されていた。そこに16a1・

16a2などからのリンパ管が加わった。

### 考察

上腹部からの太い集合リンパ管としては、腹腔動脈・上腸間膜動脈の右側で神経叢より浅く、8p, 12p, 13に始まるものが最も明瞭であり、その他の多くの集合リンパ管と同様に16b1に注いだ。しかも、臍頭後面と肝十二指腸間膜後面のリンパ管の中には、16b1を一次リンパ節にするものを認めた。以上の結果から16b1は、上腹部における多経路共通最終介在リンパ節であると同時に、センチネルノードにもなりうると考えられた。また、「胸管ないし乳び槽に直接注ぐ腸リンパ本幹」という構造は、ほとんど存在しないのではないだろうか。

### 文献

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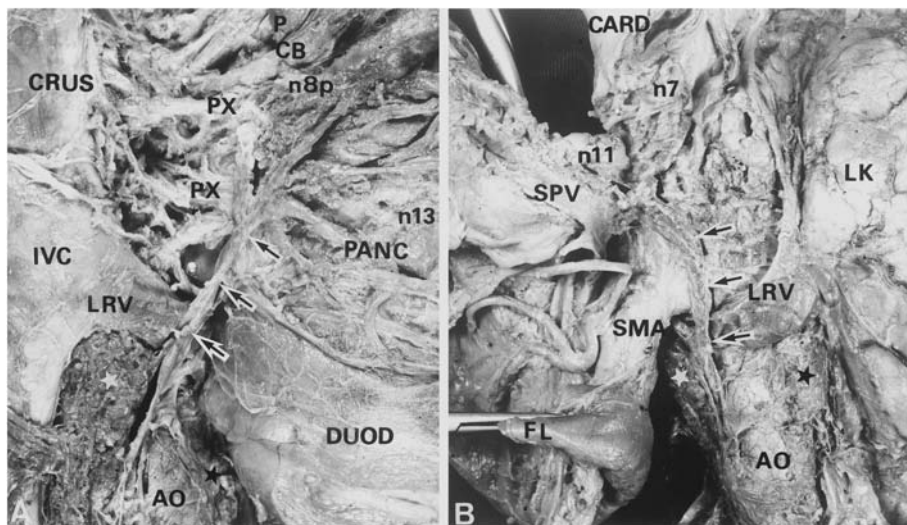


Fig. 1 Superficial collecting lymph vessels draining into a specific node subgroup of the para-aortic node (16b1).

A. Right-sided course. Thick collecting vessels (arrows) originate from the dorsal aspects of the pancreatic head (PANC) and hepatoduodenal ligament (cut: portal vein, P; common bile duct, CB). These vessels are located superficial to most of the celiac plexus (PX). A white (black) star indicates node subgroup 16b1-inter (latero) node.

AO, aorta; CRUS, crus of the diaphragm; DUOD, duodenum; IVC, inferior vena cava; LRV, left renal vein; n8p and n13, node groups (see text).

B. Left-sided course in the same specimen as shown in A. Thick collecting vessels (arrows) originate from node subgroups 7 and 11 (see text), run downward in the left side of the superior mesenteric artery (SMA) and drain into the 16b1-inter node (white star).

CARD, cardia (cut); FL, duodenojejunal flexure; LK, left kidney with its adipose capsule; SPV, splenic vein.

### Long descending lymphatic pathway from the pancreaticoduodenal region to the para-aortic nodes: Its laterality and topographical relationship with the celiac plexus

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Using 20 postmortem-treated cadaveric specimens chosen for dissections of abdominal lymphatics [i.e., those obtained from cadavers with adequately developed lymph nodes in the dorsal aspect of the pancreaticoduodenal region (node groups Nos., 13 and 17 according to Japanese Classification of Gastric Carcinoma, 1995)], we observed thick lymphatic collecting vessels that originated from not only the nodes along the common hepatic artery (node group 8) but also from other nodes in the pancreaticoduodenal region (node groups 11, 12p, 13, 14, 17) which drained directly into the para-aortic nodes (node group 16) immediately below the left renal vein (node subgroup 16b1). The collecting vessels, if they originated from the ventral (dorsal) visceral side, passed to the left (right) of the superior mesenteric and celiac arteries. Moreover, these vessels were classified into superficial and deep courses to the celiac plexus, although the superficial vessels were consistently observed and much thicker than the deep ones. In 1 of 20 specimens, the right-sided deep course continued to the thoracic duct without a nodal relay. However, the left-sided deep course, originating from the nodes along the left gastric artery (node group 7), was short and thin. Moreover, in contrast to the other 3 routes draining into node subgroup 16b1, it terminated at the para-aortic node above the left renal vein (node subgroups 16a1 and 16a2). We hypothesized that the thick collecting vessels play more critical roles as the metastatic route than the thin and diffuse, lymphatic network. Therefore, the above-stated collecting vessels, especially the superficial courses, seem to form “direct descending pathways” from the relatively peripheral lymphatics in the upper abdomen toward the thoracic duct origin. The present findings require a correction of the classical concept about “the intestinal lymph trunk” because the thick collecting vessels are not direct drainage routes to the thoracic duct or cisterna chyli (see footnote) but they carry the last-intercalated node, i.e., node subgroup 16b1. Moreover, using another 100 specimens, we reported which of the para-aortic nodes the thoracic duct originated from. In short, the thoracic duct usually (91%) originated from node subgroup 16b1 with 2 tributaries from the 16b1-latero and 16b1-inter nodes. However, efferents from node subgroups 16a1 and/or 16a2 were usually relayed by the 16b1 node. Consequently, the 16b1 node, that is easily identified by Kocker’s maneuver or retropancreaticoduodenal mobilization, seemed to be “the common terminal node” in the upper abdominal lymphatics. Likewise the sentinel node concept, or even in contrast to the sentinel node concept because of its suggested limitation if applied in the upper abdominal region (Maruyama, 2001), we believe that the common terminal concept facilitates good decision making before and during surgery in the pancreaticoduodenal region.

**Key words:** intestinal lymph trunk, thoracic duct, last-intercalated node, para-aortic nodes

**Footnote:** The cisterna chyli is well known as the terminal of the intestinal trunk but now, it is regarded as atypical morphology.