ABSTRACT

We investigated whether lymph-directed substances injected into the mediastinal connective tissue of dogs reached the regional lymph nodes of the esophagus. In 46 dogs, 1.5 mL of cuttlefish particles or activated carbon particles containing 15 mg of bleomycin (CH-BLM) was injected at two sites: into the connective tissue between the trachea and the aorta via mediastinoscopy in 23 dogs (16 with cuttlefish particles and 7 with CH-BLM: mediastinal group), and into the crura of the diaphragm by means of laparotomy in 23 dogs (16 with cuttlefish particles and 7 with CH-BLM: crural group). Cuttlefish particles, distinguished by decolorization with melanin bleaching, showed selective affinity for lymphatics.

When cuttlefish particles were injected into mediastinal connective tissue, the rate of staining (# of black-stain positive nodes/# of examined nodes) was higher in the crural group than in the mediastinal group. In the crural group, bleomycin activity in lymph nodes was higher in the regions from the neck to the abdominal para-aortic region than at the injection site, excluding the peri-gastric region. If the topography of lymphatics and lymph flow kinetics in man are similar to that of the dog, then the crura of the diaphragm appears to be a potentially effective site for applying loco-regional chemotherapy for carcinoma of the esophagus in patients undergoing transhiatal esophagectomy.