Iodoliposputosis Following Lymphangiography*  
Report of a Case  
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LYMPHANGIOGRAPHY IS A WIDELY PRACTICED diagnostic method to determine the anatomic integrity of the lymphatic networks. Presently, the only radiopaque media available which will demonstrate these nodes contain oil. Complications, notably pulmonary oil embolization following the use of oily radiopaque media, do occur. The following case represents a severe example of pulmonary oil embolization and demonstrates that oil persists in the lungs and may be recovered from the sputum for over six weeks following the patient’s symptomatic recovery and radiologic improvement.

CASE REPORT

A sixty-one-year-old railroad employee was admitted to the hospital for the first time complaining of a 20 pound weight loss during the two months prior to his hospitalization. The physical examination was unremarkable except for right flank fullness. A barium enema revealed an annular filling defect suggestive of carcinoma involving approximately 7 cm. of the distal ascending colon. Lymphangiograms were obtained by isolating and cannulating lymphatic channels on the dorsum of each foot and injecting 8 ml. of an ethyl ester of iodinated fatty acids of poppyseed oil containing 35 per cent iodine Ethiodol** using the Wallace*** modification of Kinmouth’s**** technique. He remained asymptomatic during the procedure; fluoroscopic monitoring revealed no evidence of obstructed lymphatics. Twelve hours following the injection of the contrast medium, he experienced shaking chills followed by a fever of 102.0° F. with a concomitant tachycardia, leukocytosis of 12,000 per mm.³, and productive cough. Subsequently, bilateral rales were audible throughout the lung bases.

Figure 1: Left chest x-ray film prior to lymphangiogram. Right chest x-ray film 24 hours following lymphangiogram demonstrating bilateral diffuse finely granular stippling.

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fields and a roentgenogram of the chest revealed diffuse bilateral fluffy infiltrates consistent with pneumonitis (Fig. 1). The patient's temperature remained elevated for nine days; the highest recorded was 102°F, which occurred 24 hours following the study. Two days post-lymphangiogram, the sputum was analyzed qualitatively for oil and iodine, the two components of the contrast medium. Although he had received no oil or iodine preparations except the aforementioned ethiodized oil, free oil droplets and sudanophilic macrophages were observed microscopically in the sputum. In addition, the sputum also contained iodine by starch test. The productive cough and pulmonary infiltrates gradually diminished during the two weeks following the lymphangiogram. Six weeks following the study, the sputum still contained iodine, oil droplets associated with macrophages, and inflammatory cells. At seven weeks, although iodine was still present in the sputum, oil could not be identified and finally at eleven weeks post-embolization, the sputum contained neither iodine nor oil. He ultimately underwent right hemicolectomy and the adenocarcinoma was resected.

**DISCUSSION**

Several reports suggesting the frequency of clinically detectable pulmonary complications following lymphangiography have appeared. Bron et al. report a 55 percent radiologic incidence of pulmonary complications, usually manifest by finely granular stippling. Since most patients with oil embolization have mild symptoms or none at all, the true incidence of pulmonary complications is likely even higher because an x-ray film of the chest is omitted or it is not diagnostic of the pulmonary embolization. Eighty-one percent of patients with pulmonary embolization have had obstruction of the lymphatics by tumor suggesting the presence of lymphatico-venous shunts. Experimental studies in dogs have demonstrated that contrast medium injected directly into a node whose efferent channel is obstructed, is shunted into adjacent veins through lymphatico-venous communications with resultant pulmonary microemboli. Although post-embolization oil emboli are usually innocuous, occasionally severe manifestations do occur. Bron et al. report two such cases in their series of 80 patients on whom the procedure was performed. In spite of the rapid resolution of the signs and symptoms of pulmonary emboli, the oily contrast medium remains in the lungs for periods up to six weeks and iodine even longer, as demonstrated in this report. This complication might be averted by replacing oily media with water soluble agents. However, aqueous lymphangiographic media are presently unavailable.

**REFERENCES**


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