A Patient with Fever after Neoadjuvant Chemoradiotherapy for Esophageal Cancer

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Clinical Image

A 68-year-old man was analyzed for dysphagia and weight loss. His medical history revealed a stadium III-IV non-Hodgkin lymphoma for which was treated with radiation therapy 40 years ago. Endoscopy showed an adenocarcinoma in the distal esophagus which was staged as cT3N2M0. Multidisciplinary tumor board advised neoadjuvant chemoradiotherapy (weekly administration of five cycles of neoadjuvant chemoradiotherapy (intravenous carboplatin (AUC 2 mg/mL per min) and intravenous paclitaxel (50 mg/m(2) of body-surface area) for 23 days) with concurrent radiotherapy (41.4 Gy, given in 23 fractions of 1.8 Gy on 5 days per week) followed by esophagectomy after restaging. Six weeks after the end of neoadjuvant therapy his dysphagia had disappeared (clinical response) but he presented with fatigue, dyspnea, and fever (39°C). Oxygen saturation was 85%, CRP=60 mg/L and leukocyte count is 9.3 × 10⁹/L. CT-scan showed the typical image of radiation pneumonitis (Figure 1) which corresponded completely with the margins of the irradiated field (Figure 2). The subsequent weeks were notable for progressively worsening of his pulmonary condition despite administration of prolonged steroids and antibiotics and he ultimately expired.

Depending on patient-specific factors, radiation dose, and tumor site, radiation-induced lung injury may occur. This is a typical case of radiation pneumonitis, which usually occurs between 1 and 6 months after the completion of radiation therapy. The radiation dose given in the neoadjuvant setting is relatively low, making this an extremely rare complication of neoadjuvant therapy for esophageal cancer. It is treated with steroids and antibiotics to prevent the patient from bacterial pulmonary superinfections.

Figure 1: CT-scan with interstitial abnormalities of both lungs. These include ground-glass opacities and consolidation in the radiation field (anteroposterior and lateral).

Figure 2: CT-scan on the same level as Figure 1. This is a CT scan for radiation planning with target area (red) and isodose lines (orange-yellow-green-light-blue).