

Chest cavity fire during emergency cardiac surgery

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At this year's Euroanaesthesia Congress (the annual meeting of the European Society of Anaesthesiology) in Vienna, Austria (1-3 June), doctors present the unique case of a man who suffered a flash fire in his chest cavity during emergency heart surgery caused by supplemental oxygen leaking from a ruptured lung.

Dr. Ruth Shaylor and colleagues from Austin Health in Melbourne, Australia, where the incident took place, warn that the case highlights the potential dangers of dry surgical packs in the oxygen-enrich environment of the operating theatre where electrocautery devices (using heat to stop vessels from bleeding) are used.

In August 2018, a 60-year-old man presented for emergency repair of an ascending [aortic dissection](#)—a tear in the inner layer of the aorta wall in the chest. The patient had a history of chronic obstructive pulmonary disease (COPD) and had undergone [coronary artery bypass](#) grafting one year previously.

As surgeons began to operate, they noted that the man's right lung was stuck to the overlying sternum with areas of overinflated and destroyed lung (bullae; often caused by COPD). Despite careful dissection, one of these bullae was punctured causing a substantial air leak. To prevent [respiratory distress](#), the flows of anaesthetic gases were increased to 10 litres per minute and the proportion of oxygen to 100%.

Soon after, a spark from the electrocautery device ignited a dry surgical

pack. The fire was immediately extinguished without any injury to the patient. The rest of the operation proceeded uneventfully and the repair was a success.

"While there are only a few documented cases of chest cavity fires—three involving thoracic surgery and three involving coronary bypass grafting—all have involved the presence of dry surgical packs, electrocautery, increased inspired oxygen concentrations, and patients with COPD or pre-existing [lung disease](#)", explains Dr. Shaylor.

"This case highlights the continued need for fire training and prevention strategies and quick intervention to prevent injury whenever electrocautery is used in oxygen-enriched environments. In particular surgeons and anaesthetists need to be aware that fires can occur in the [chest cavity](#) if a lung is damaged or there is an air leak for any reason, and that patients with COPD are at increased risk."

Provided by European Society of Anaesthesiology

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