Traumatic bile leak in war-injured Syrians: five patients treated by ERCP

Table 1 Details of the five war-injured Syrian civilians with bile leaks and the treatment they underwent.

Patient number	Age, years	Sex	Liver injury	Type of bile leak	Endoscopic intervention	Short-term outcome
1	27	Male	Shrapnel, grade 3	High grade, common hepatic duct	Sphincterotomy with plastic stent insertion (10 Fr, 12 cm)	Resolution of external biliary leakage
2	26	Female	Shrapnel, grade 3–4	Low grade, segments 6–7	Sphincterotomy	Resolution of external biliary leakage
3	36	Female	Shrapnel, grade 2–3	Low grade, segment 6	Sphincterotomy	Resolution of external biliary leakage
4	12	Male	Crash, shrapnel	Low grade, peripheral with biliopleural fistula	Sphincterotomy with plastic stent insertion (7 Fr, 7 cm)	Resolution of external biliary leakage
5	15	Male	Shrapnel, grade 3	High grade, segments 5–6	Sphincterotomy with plastic stent insertion (10 Fr, 10 cm)	Resolution of external biliary leakage

Fig. 1 Images during endoscopic retrograde cholangiopancreatography (ERCP) carried out on a 12-year-old boy with spinal, chest, and abdominal injuries who was noted to have bilious fluid draining from his chest tube (biliothorax) showing: **a** the appearance as contrast was being injected; **b** a bile leak from the subsegmental biliary pedicle and a biliopleural fistula; **c** a stent in situ.

About 20 months ago, an open letter was published in *The Lancet* calling for patients from the Syrian civil war to be treated [1]. Specifically, the letter said, “It is our professional, ethical, and moral duty to provide treatment and care to anyone in need”. The ongoing civil war in Syria has led to what is arguably one of the world’s worst humanitarian crises. According to the World Health Organization (WHO), 37% of Syrian hospitals have been destroyed, 20% are severely damaged, and more than 70% of Syria’s medical professionals have fled the country [1,2]. Since the start of this conflict, approximately 700 Syrian war-injured, most of them civilian non-com-

batants, have received medical treatment in Israel [3,4]. Between December 2013 and October 2014, five Syrian civilians with multitrauma, including penetrating liver injuries complicated by bile leakage, were transferred to our medical center for further evaluation and treatment (Table 1). All of the patients underwent diagnostic and therapeutic endoscopic retrograde cholangiopancreatography (ERCP). Bile leaks were diagnosed and treated endoscopically by biliary sphincterotomy either alone (n=2) or combined with biliary stent insertion (n=3). All of the external bile leaks (via percutaneous abdominal drains or chest tube), including that in a patient

who had a biliopleural fistula (Fig. 1), resolved within 2–5 days of endoscopic intervention (Table 1). The external drains were removed 2–3 days after the cessation of the bile leakage. After a period of hospitalization ranging from 12 to 30 days, once their general condition had been stabilized, all of the patients were transferred back across the border with appropriate recommendations, including for removal of any stents that had been inserted. Unfortunately, we do not have long-term clinical or endoscopic follow-up. Traumatic, non-iatrogenic biliary injuries, unlike iatrogenic injuries, are usually complex in nature and are frequently

associated with multiorgan trauma and infection or sepsis.

A high risk surgical repair has been the conventional mode of therapy for post-traumatic bile leaks. Recent data has shown that ERCP is effective (>80% rates of healing) in managing bile leaks secondary to blunt or sharp traumatic liver injuries, using transpapillary endoscopic sphincterotomy, biliary stenting, or both. There is currently no consensus on which ERCP maneuver is superior [5].

As the war rages on, we will continue to provide medical care to anyone in need, just as was called upon for these patients.

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