

LETTER

A Case of Recurrent Acute Pancreatitis Due to Intra-Articular Corticosteroid Injection

Patompong Ungprasert¹, Nitipong Permpalung¹,
Sarawut Summachiwakij², Wuttiporn Manatsathit³

¹Department of Internal Medicine, Bassett Medical Center. Cooperstown, NY, USA.

²Department of Internal Medicine, Queens Hospital Center. Jamaica, NY, USA.

³Department of Internal Medicine, Saint John Hospital and Medical Center. Detroit, MI, USA

Summary

Context Corticosteroid is a well-established cause of drug-induced pancreatitis. However, acute pancreatitis from intra-articular injection of corticosteroid has never been described. **Case report** A 69-year-old male presented with acute abdominal pain and was diagnosed with acute pancreatitis. The patient had one episode of acute pancreatitis two year earlier. Both episodes occurred after intra-articular cortisone injection. Investigations for other causes of pancreatitis were negative. **Conclusion** We report the first case of acute pancreatitis from intra-articular corticosteroid injection. Physicians should be aware of this adverse reaction of corticosteroid that can even occur with local administration.

Dear Sir,

Drug-induced pancreatitis is uncommon with an estimated incidence of only 2% of all cases of acute pancreatitis in general population. Corticosteroid is a class I drug associated with pancreatitis, which means there are at least 20 reported cases of acute pancreatitis associated with corticosteroid use plus at least one case of positive re-challenge [1]. However, acute pancreatitis from intra-articular corticosteroid injection has never been described.

We would like to report a case of a 69-year-old male who developed recurrent acute pancreatitis after receiving intra-articular cortisone injection. The patients presented to our institution with a one-day history of epigastric pain radiating to the middle of his upper back. Physical examination revealed a moderate tenderness at epigastrium with a decreased bowel sound. Laboratory investigations were remarkable for markedly elevated lipase and amylase level while other blood chemistry tests, including calcium, triglyceride and IgG4 levels, were within normal range. His past medical history was

significant for hypertension and osteoarthritis of both knees. He denied any history of alcohol drinking. His current medication included metoprolol and acetaminophen as needed (he took these two medications for four years). However, he just received cortisone injection to his right knee three days prior to the onset of his abdominal pain. He had one episode of acute pancreatitis two years earlier. Further medical record review showed that he also received cortisone injection to his right knee four days prior to the onset of that episode. He was diagnosed with acute pancreatitis and was managed conservatively with bowel rest, intravenous fluid and morphine. Further radiological investigations, including ultrasonography of abdomen and magnetic resonance cholangiopancreatography (MRCP), were negative for gallstones or any anatomical pathology. He was ultimately diagnosed with corticosteroid-induced pancreatitis and was discharged after five days of hospitalization with the instruction to avoid taking any corticosteroid medications.

In clinical practice, establishing the cause and effect from a medication can be very difficult. In 1977, Karch *et al.* proposed a set of criteria that is now widely used to diagnose adverse drug reaction [2]. A definite case has to: 1) follow a reasonable temporal sequence; 2) a known response pattern; 3) the symptoms have to stop after drug discontinuation; and 4) recur after repeated

Received January 6th, 2014 – Accepted January 23rd, 2014

Key words Drug-Related Side Effects and Adverse Reactions; Pancreatitis; Steroids

Correspondence Patompong Ungprasert
Bassett Medical Center; 1 Atwell Road; Cooperstown, NY –
13326; USA
Phone: +1 607.547.3456; Fax: +1 607.547.3555
E-mail: patompong.ungprasert@bassett.org

exposure. Our case met all the proposed criteria as his acute pancreatitis occurred three days after the injection, corticosteroid is a well-established cause of acute pancreatitis [1, 3], his symptoms resolved spontaneously and the acute pancreatitis reappeared after he was re-exposed to intra-articular steroid, thus the diagnosis of corticosteroid-induced pancreatitis was definite. Moreover, extensive investigations revealed no other possible causes of acute pancreatitis. The patient was taking metoprolol and acetaminophen but these two medications are rarely reported as a cause of acute pancreatitis [1] and he had been taking these medications for four years, even without stop taking them during his first episode of acute pancreatitis.

Corticosteroid is a well-established cause of drug-induced pancreatitis with several reported cases, including cases with a positive re-challenge [3, 4]. Its pathophysiologic mechanism remains unclear but might be related to the alteration of lipid and calcium metabolism, the known systemic effect of corticosteroid [4]. Nevertheless, acute pancreatitis associated with intra-articular corticosteroid injection has never been reported. We believed that the systemic absorption of cortisone was responsible for this adverse reaction as several case reports of systemic side effect from local corticosteroid injection have been published [5, 6].

In conclusion, we report here the first case of acute pancreatitis from intra-articular corticosteroid injection. Physicians should be aware of this relatively uncommon but potentially fatal adverse reaction of corticosteroid that can occur even with local administration.

Conflict of interest The authors have no potential conflict of interest

Reference

1. Trivedi CD, Pitchumoni CS. Drug-induced pancreatitis: an update. *J Clin Gastroenterol* 2005; 8:709-11. [PMID: 16082282]
2. Karch FE, Lasagna L. Adverse drug reactions. A critical review. *JAMA* 1975; 234:1236-41. [PMID: 1242749]
3. Nitsche C, Maertin S, Scheiber J, Ritter CA, Lerch MM, Mayerle J. Drug-induced pancreatitis. *Curr Gastroenterol Rep* 2012;14:131-8 [PMID: 22314811]
4. Yoshizawa Y, Ogasa S, Izaki S, Kitamura K. Corticosteroid-induced pancreatitis in patients with autoimmune bullous disease: Case report and prospective study. *Dermatology* 1999; 198:304-6. [PMID: 10393460]
5. Lansang MC, Farmer T, Kennedy L. Diagnosing the unrecognized systemic absorption of intra-articular and epidural steroid injections. *Endocr Pract* 2009; 15:225-8. [PMID: 19364690]
6. O'sullivan MM, Rumpf WR, Jones MK, Williams BD. Cushing's syndrome with suppression of the hypothalamic-pituitary-adrenal axis after intra-articular steroid injections. *Ann Rheum Dis* 1985; 44:561-3. [PMID: 4026419]