

# A Confounding Suicidal Attempt With Organophosphate Injections

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## Abstract

We present a rare case of a suicidal attempt, in a 65 year old man, with intramuscular organophosphate injections. The local and extreme intraabdominal infective complications are further discussed along with their challenging management.

## INTRODUCTION

Organophosphates (OPs) are commonly used agricultural insecticides and OP poisoning is not an uncommon clinical entity. Though very rare, their use for committing suicides and related local infections have also been reported. Herein, we further render a challenging suicidal case with an extreme combination of local and systemic infective complications.

## CASE REPORT

A 65 year old man with OP intoxication was seen in the emergency room. The history comprised a suicidal attempt 30 hours ago with bilateral gluteal injections of malathion –a strong OP insecticide- and an immediate atropin administration in a primary center where he was first conveyed to. A thorough physical examination was quite normal other than bilateral, painful, hyperemic injection sites in his gluteal regions. The immediate laboratory investigations yielded only moderate hyperglycemia (240 mg/dl). He was then followed in the intensive care unit. The consecutive serum cholinesterase levels (on the 2nd, 8th and 10th days) were as follows: 3450 U/L (5000-13000 U/L), 3730 U/L, 4465U/L. Upon consultation to the psychiatry department, he was also diagnosed to have major depression and was transferred to the psychiatry ward -after a 10 days of well being- since he kept on his will for another suicidal attempt. On the next week of his follow up in the psychiatry ward, he started suffering from nausea, vomiting, abdominal pain, respiratory distress and fever. His vital functions were as follows: 38.6 °C, heart rate: 148/ min, blood pressure: 80/40 mmHg. The physical examination disclosed mild, generalized tenderness in the abdomen and a 5x10 cm erythematous and painful abscess in his right gluteal region.

He had 23000 / $\mu$ L leukocytes and neutrophils (80%) with toxic granulations were detected in the peripheral smear. Empirical treatment of sulbactam-ampicilline (SAM) was started -i.v. 4x1 gr/day. Despite the antibiotic and fluid replacement therapy, his general condition worsened and he was transferred back to the intensive care unit with the suggestive diagnosis of septic shock. His antibiotic regimen was switched to SAM 4x2 gr/day and amikacin 2x500 mg /day. As his abdominal pain had not subsided and his fever had started to increase up to 39.5 °C, an onward abdominal computerized tomography (CT) was performed and it depicted a huge iliopsoas abscess (Figure 1). The abscess was decided not to be drained due to its high density content and its being multilobulated. After the infection had resolved and his mood was stabilized, he was discharged to complete a regimen of citalopram and olanzapine. The abscess had completely vanished and the patient was observed to be responding favorably to psychotherapeutical and pharmacological treatment in the ongoing controls.

### Figure 1

Figure 1: Computerized tomography of the patient demonstrating the right sided retroperitoneal abscess (11x7.5x11 cm)



### DISCUSSION

The mechanism of OP toxicity is mainly due to their inhibiting both cholinesterase and pseudocholinesterase irreversibly [1]. This causes accumulation of acetylcholine in the synaptic junctions and exaggerated neural stimulation [2]. The systemic clinical manifestations consist of hypersalivation, diarrhea, muscle weakness, fasciculations, respiratory failure, convulsions, bradycardia and decreased consciousness [3]. The respiratory failure is the major cause of mortality [2] thus early diagnosis and prompt management -close monitorization, atropin and oximes administration when necessary- play an important role in the follow up.

The mode of exposure either takes place via inhalation and dermal contact during their use or via oral intake for a suicidal attempt [1,2,4]. However, their suicidal use parenterally and relevant complications are very rarely reported in the literature. Nishioka et al [5] reported two cases with local abscess development after suicidal injection of i.m. malathion and s.c. fenitrothion. They implied that in such patients the usual measures to reduce the exposure i.e. vomiting, lavage and activated charcoal may not be beneficial and added that local complications might further challenge the clinical scenario. Güven et al [4] reported another suicidal case of i.v. methamidophos injection whereby systemic findings were not accompanied by any regional complications. Hadimoğlu et al [6] reported two cases of percutaneous OP injection -again for committing a suicide- in both of whom local abscess and tissue necrosis were observed besides the well known systemic effects.

Likewise, they drew attention to the necessity of intimate follow up of these patients also for their susceptible sites of injection.

In our patient due to the lack of severe systemic findings; long term atropin, other than the first dose in the immediate setting, or pralidoxime was not applied. Nor had the respiratory distress on the second week been thought to be related with delayed OP intoxication (Intermediate syndrome) but rather was interpreted to be concerned with ongoing septic shock. Similarly, the hyperglycemia was considered to be an ordinary component of the intoxication [7]. What bothered us more were the confronting infective complications -the gluteal and iliopsoas abscesses. Though the very well known treatment of an abscess is drainage and antibiotics; due to the high density content and its being multilobulated in our patient, the radiologists decided to postpone a direct intervention unless the medical treatment proved to be noncontributory. Fortunately, the combination regimen of antibiotics turned out to be sufficient.

Overall, besides exemplifying an OP poisoning beset with many problems; our patient with major depression is the first report in the literature rendering such an extensive infective complication after a suicidal attempt with local OP injection.

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