Letters to the Editor

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Acute pancreatitis following kerosene ingestion - a rare association

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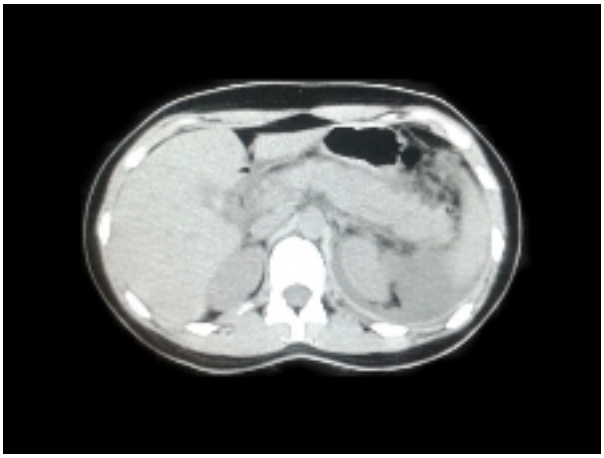
Dear Editor,

We describe a 13-year-old adolescent girl, who had consumed the aromatic hydrocarbon, kerosene, who later developed acute pancreatitis, to highlight the possible association between the two events.

A 13-year-old developmentally normal adolescent female presented with history of fever, cough, breathlessness and abdominal pain of two days duration. She also gave a history of consumption of kerosene, one week previously following a quarrel with her sibling for which no medical assistance was rendered. There was no underlying medical or surgical illness in the patient. On examination, she was toxic, febrile, tachypnoeic and hypoxic. Respiratory system examination revealed bilateral crepitations with decreased air entry over the both infrascapular regions. Epigastric tenderness was elucidated on abdominal examination. Other systems were normal. She was admitted with provisional diagnosis of kerosene-induced chemical pneumonitis with gastritis. She was kept nil by mouth and started on intravenous amoxycillin-clavulanic acid for chemical pneumonitis and other conservative measures like antipyretics (paracetamol), proton pump inhibitors (pantoprazole) and bronchodilators (salbutamol nebulisation). Initial investigation showed increased white cell count (24,500cells/cu.mm) and a chest X-ray showed bilateral consolidation with pleural effusion. After 48 hrs of admission her respiratory distress worsened with increasing oxygen requirements. Repeat chest X-ray showed increased pleural effusion with bilateral consolidation. Hence antibiotics were stepped up to intravenous piperacillin-tazobactam. On day 4 of admission, she showed signs of improvement in her general condition and tolerated liquid diet orally well. However she had persistent abdominal pain. Despite having been treated symptomatically for five days, the pain was unrelenting and hence she was investigated for the underlying cause. On further evaluation, she was found to have elevated serum amylase (377u/l) and serum lipase levels (1820u/l) and CT abdomen showed peri pancreatic fluid collection suggestive of acute pancreatitis (Figure 1). She was managed nil per mouth with nasogastric tube insitu. She was continued with intravenous antibiotics for chemical pneumonitis and other supportive measures. Serial measurements of serum amylase and lipase showed decreasing trend. As she became symptomatically better with good tolerance to oral feeds, she was discharged on day 18 of admission. On follow-up after one week, both symptomatically and clinically, she showed improvement and her serum lipase, amylase levels were found to be within normal limits.

Figure 1: CT Abdomen- Showing evidence of peripancreatic fluid collection suggestive of acute pancreatitis.



Drugs are a relatively rare cause of acute pancreatitis, with an estimated incidence of 0.1-2%. Many drugs have been suspected of causing pancreatitis, but the true incidence is not known as the evidence is derived mainly from random case reports. Case reports with the strongest evidence are those that clearly diagnose pancreatitis and exclude common aetiologies, provide the dose and time interval between the start of treatment with the suspected drug and the development of pancreatitis, document response to withdrawal of the drug, and demonstrate recurrent pancreatitis upon rechallenge with the drug.[1] We analysed our patient records for any possible link between pancreatitis and drugs used for her illness. Of the treatments we used in this case, amoxycillin-clavulanic acid, piperacillin-tazobactam, paracetamol and pantoprazole have documented association with pancreatitis. However, we believe that they were not the cause of pancreatitis in this case given that all medications were continued until

discharge. In spite of giving these drugs the child showed a decreasing trend in the serum amylase and lipase levels with symptomatic improvement. Her symptoms did not worsen with drugs used. As we excluded drugs as the reason for pancreatitis in this case, we then reviewed all the available literature that would demonstrate the possible association between acute pancreatitis and kerosene ingestion. In our literature review, we found that two studies from Indian subcontinent, namely Gupta et al and Bader-un-Nisa et al had no mention about acute pancreatitis in their evaluation of children with kerosene ingestion.[2,3] Among various Western literature, a study from Israel also did not favour this association.[4] On further review, it was found that occupational exposure to hydrocarbons can be a prelude to the development of chronic pancreatitis.[5] Whereas, this study limits itself to adults and no similar study was undertaken for children.

In light of this rare association, we report this, as it might be the first case of acute pancreatitis following kerosene ingestion in children.

Sincerely,

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Quinine induced Torsades de pointes ventricular tachycardia in a four-year-old girl

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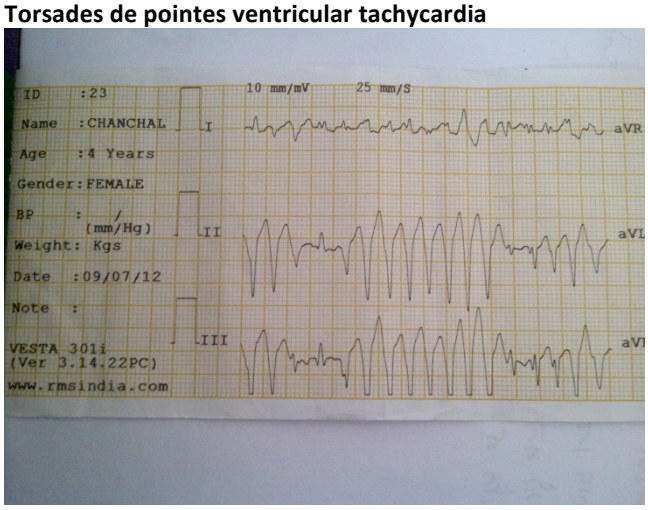
Dear Editor,

Torsades de pointes ventricular tachycardia (TdPVT) is a rare life-threatening arrhythmia and may be the underlying cause for sudden cardiac death in patients with structurally normal hearts. It is a distinctive form of polymorphic ventricular tachycardia (PVT), characterised by a gradual change in the amplitude and twisting of the QRS complexes around the isoelectric line.

We are communicating a case of Torsades de pointes ventricular tachycardia in a four-year-old girl, following oral quinine ingestion that was successfully managed with magnesium sulphate and supportive treatment. The girl was admitted with pain in abdomen and progressively increasing breathlessness. She had a fever two days before admission, for which she was given oral Quinine 150mg and paracetamol 200mg, thrice a day by a primary care physician. She became afebrile by day three but had uneasiness. On admission, she was agitated with low pulse volume and blood pressure and had cold peripheries, suggestive of impending shock. Her heart rate was 180/min, rhythm was irregularly irregular, blood pressure was 80/60 mm Hg, respiratory rate 46/min and liver was palpable 6cm below the costal margin in mid-clavicular line. ECG showed typical findings suggestive of Torsades de pointes ventricular Tachycardia (Figure 1). ABG analysis depicts Metabolic Acidosis with pH 7.28, HCO_3 16 mmol/L, PCO2 30 mm Hg, PO2 80 mm Hg. Injection Dopamine infusion was started to manage hypotension at a dose of 10 mic/kg/min. Meanwhile electrolyte levels were done to rule out any electrolyte disturbances. Serum sodium (147.6 meq/l), potassium (4.9 meq/l), magnesium (1.9 mg/dl) were normal with a slight decrease in serum calcium level (7.9 mg/dl). Injection Calcium Gluconate 10% was given at a dose of 2ml/kg stat, to maintain the calcium level. Our ICU setup has no electrical cardioverter and parents were not willing to travel 300 kilometres to the cardiology clinic. Therefore after consultation with the cardiologist, we planned chemical cardio version. Infusion of injection magnesium sulphate was started at a dose of 25 mg/kg over 24 hours at a rate of 1 mg/kg/hour. The treatment was effective as over the next 12 hours, the rhythm slowly became more regular

and heart rate decreased on day four of illness. Blood pressure increased to 94/72 mm Hg. After 24 hours of continued infusion of inj. Magnesium sulphate, liver regressed to the normal size, urine output became normal. ECG was done which shows sinus rhythm and routine investigation like Peripheral smear for malarial parasite (negative) ; Liver function test- normal and Hemogram (Hb-12gm/dl, TLC- 7.0 x 1000 cells per mm^3, DLC- $P_{62}L_{35}M_2E_1$, Platelets- 130 x 1000 cells per mm^3) was found to be normal.

Figure 1: Classical ECG in a four-year-old girl suggestive of Torsades de pointes ventricular tachycardia



As per the diagnostic criteria, the patient was having low probability for Congenital Long QT syndrome, so the genetic analysis was not planned.[1] Patient was discharged after 48 hours of observation with ECG showing sinus rhythm with HR-96/min, Qtc-0.44 sec and with the advice to seek cardiologist consultation.

Early onset of TdPVT is usually seen in children with congenital long QT syndrome. The commonly known congenital syndromes are Jervell and Lange-Nielsen syndrome (congenitally long QT associated with congenital deafness); and Romano Ward syndrome (isolated prolongation of QT interval). Amongst the acquired causes, drugs can commonly lead to this condition and amongst drugs, Antimicrobials and antimalarials[2] deserve utmost attention as they are commonly prescribed even at the primary care centres and community level. Withdrawal of the culprit drug and correction of the electrolyte abnormalities if present is the first recommended step in the management of Torsades de pointes. The medical management is done by drugs like Lidocaine, Mexiletine, Phenytoin, Magnesium sulphate. Acute fast or over-drive pacing is also recommended for these patients. Usually cardiac pacing or electrical cardio-version is effective method, but in a primary or secondary care set-up particularly in our country, instrument, expertise and skills are difficult to get. Our case is unique as review of literature showed no case reported amongst the children in India. In our case, infusion of Magnesium sulphate seems to be effective in controlling the heart rate and rhythm. It improved the hemodynamics of the patient and prevented progression of shock. Magnesium sulphate has evolved as an effective and safe treatment for adults with TdP but, in children, the efficacy of magnesium sulphate for TdP is not yet established. Trials have been conducted where magnesium sulphate was found to be effective in children with TdP.[3]

Sincerely,

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Rapid Manual scoring (RAMS) method for evaluation of multiple choice questions

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Dear Editor,

The computer-assisted optical mark recognition (OMR) system for scoring of Multiple Choice questions (MCQs) has emerged as a popular technique as it culminates in reliable marking and cuts down evaluation time drastically. The answer sheets need not be anonymous as marking is done by the machine. It is a matter of fact that this efficient technique is still not in use in several medical schools located in developing countries due to the issues related to familiarity, availability and affordability. We report a rapid manual scoring (RAMS) method for evaluation of MCQs as a

practical and cost effective alternative in selected situations.

A specifically designed answer sheet, which has provision for recording students' responses as well as for evaluation of questions by the examiner, is used for MCQ test. (Figure 1a).The student is required to select one of the four options for each MCQ and draw a 'tick mark' in the corresponding cell. For scoring, a key sheet is prepared by drawing a circle inside the cells which correspond to the correct answers, on a blank answer sheet. This key sheet is fixed on an illuminated X-ray view box which is placed horizontally on a desk. The answer sheet of the student is placed over the key sheet ensuring that cells of both the sheets overlap each other precisely. The answer is marked as correct if the tick mark overlaps the circle, and the answer is marked as incorrect if the tick mark does not overlap the circle. The examiner marks each MCQ as 'correct', 'incorrect' or 'not attempted' by placing an 'X' in appropriate cell in the evaluation section of the answer sheet. After scoring the individual questions in the answer sheet of the student, the 'Xs' in each column are counted and the number is recorded at the bottom of the column. Alternatively, a numerical value can be used in place of 'X', obviating the need to count 'Xs' afterwards. Total marks are tabulated by multiplying the number of correct answers to the mark allocated for each correct answer. Marks can be deducted according to the number of incorrect answers, if negative marking is contemplated. An example of evaluation of 10 MCQs is shown in Figure 1b, wherein, the student has answered 7 MCQs correctly, 2 MCQs incorrectly and she did not attempt one MCQ. The tabulation will be: (7×1) - (2×0.25) + 1×0 = 6.5, if we assign one mark for each correct answer, and deduct 0.25 marks for each incorrect answer. Each answer sheet should be visually scanned by the examiner for duplicate or multiple tick marks; overwriting, cutting, or erasing; and the affected answer should be marked according to the evaluation policy for the test.

An X-ray view box, required for RAMS, is commonly available equipment in all medical schools. Alternatively, an illuminated transparent table top may also be used. The authors have been using the RAMS method for the marking of MCQs for term tests for medical students for the last several years. After being familiarised with the RAMS method, one can score one answer sheet having 30 MCQs in less than two minutes. The RAMS method is proposed as a practical and cost effective alternative for evaluation of MCQ for tests involving small number of questions (up to 50) and small number of students (up to 100). The computer marking seems to be an unnecessary extravagance when: (a) the test is a non-critical or small-group exam; (b) the number of questions are small; or (c) the number of candidates is small and, (d) detailed statistical analysis is unnecessary.[1] We do not claim any uniqueness about the technique. Some medical schools may have also developed their own techniques to facilitate manual evaluation of MCQs. However, benefit of such techniques could not be shared by others as these techniques have not been reported in literature. RAMS is an appropriate technique for manual evaluation of MCQs as a part of periodic formative assessment conducted by teachers, especially when facility for computerised scoring is not available especially in developing countries.

Figure 1: (a) Answer sheet used in RAMS method for evaluation of MCQs (b) Student's answer sheet being evaluated by overlapping the key sheet.

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Answer Sheets for MCQ

Name of Examination:

Name of the Student: Roll No.: Date:

	Student Response				Evaluation		
MCQ No.	A	B	C	D	Right Answer	Wrong Answer	Not Attempted
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
					____ X 1	____ X ¼	____ X 0
Sub Total					____	(+) ____	(+) ____
Total							

(a)

Signature of Assessor

DEPARTMENT OF SURGERY, UCMS & GTB HOSPITAL, DELHI

Answer Sheets for MCQ

Name of Examination:

Name of the Student: Roll No.: Date:

	Student Response				Evaluation		
MCQ No.	A	B	C	D	Right Answer	Wrong Answer	Not Attempted
1.	✓				1		
2.			✓		2		
3.		✓			3		
4.							1
5.		✓				1	
6.				✓	4		
7.		✓				2	
8.			✓		5		
9.				✓	6		
10.		✓			7		
					7 X 1	2X ¼	1 X 0
Sub Total					7 (+) 0.50	(+) 0	
Total					6.5		

(b)

Signature of Assessor

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