

Correspondence

Neuroleptic malignant syndrome without withdrawal of levodopa

Neuroleptic malignant syndrome (NMS) in patients with Parkinson disease is a rare but potentially lethal complication. The withdrawal of levodopa is the most common cause of NMS. Other precipitating factors include hot weather, dehydration, infection, menstruation, etc.¹ Only 21 patients with Parkinson disease who developed NMS without any history of withdrawal of levodopa have been reported in the literature. We encountered a similar patient who developed NMS without withdrawal of levodopa, following an episode of acute gastroenteritis and dehydration.

This 42-year-old man with a 7-year history of Parkinson disease presented with a history of acute diarrhoea for 4 days, followed 2 days later by high grade fever. On day 4, the patient developed weakness and rigidity of all 4 limbs and decrease in urine output. He was on levodopa and carbidopa till the day of admission. He had a history of dyskinesias after taking drugs and also of 'wearing off' effect. The patient was conscious, oriented but drowsy at the time of admission; the blood pressure was 180/80 mmHg, pulse rate 94/minute and the body temperature was 102 °F. He had rigidity on examination and the systemic examination was normal. On laboratory examination, haemoglobin was 11.5 g/dl, total leucocyte count 11 400/cmm, platelets 180 000/cmm, blood urea 204 mg/dl, creatinine 10.4 mg/dl, potassium 5.2 mEq/L, calcium 4.7 mg/dl, phosphate 7.9 mg/dl and total creatine phosphokinase 1630 IU/L. Urine was positive for myoglobin. We made a diagnosis of NMS with acute renal failure and Parkinson disease.

He was treated with intravenous fluids, furosemide, bromocriptine and haemodialysis; carbidopa and levodopa were continued. He died on day 4 after admission.

Discussion

Neuroleptic malignant syndrome is an uncommon side-effect of antipsychotic medications characterized by severe rigidity, tremor, fever, altered mental status, autonomic dysfunction, and elevated serum creatinine-phosphokinase and white blood cell count.² NMS has been described in patients with idiopathic Parkinson disease after long term dopaminergic medications are suddenly stopped or moderately decreased. If patients with Parkinson disease develop severe rigidity, stupor and hyperthermia, withdrawal of L-dopa should be suspected. Although sudden withdrawal of levodopa is the most frequent cause, cases without such history have also been reported.

The other precipitating events may include intercurrent infections, dehydration, hot weather, discontinuation of other anti-parkinsonian drugs and 'wearing off' phenomenon.¹ In patients who received dopaminergic medications, the development of NMS occurred exclusively in the warm season—May to August.³ The development of NMS could occur at any season in association with the cessation of dopaminergic drugs.³

The pathophysiology in these cases remains elusive. Functional withdrawal of dopamine, especially in those precipitated by 'wearing off' phenomenon, has been postulated.⁴

There are only 7 case reports and 2 small case series published so far of patients who developed NMS without any history of withdrawal of levodopa.³⁻¹¹

Our patient had no history of discontinuation of levodopa but had an episode of diarrhoea during the month of June possibly leading to dehydration. This case reinforces the importance of considering NMS as a possible diagnosis in a patient with Parkinson disease who presents with rigidity and fever, even if there is no history of withdrawal of levodopa.

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Postgraduate medical entrance system needs reform

The article by Vyas and Supre¹ focuses on the important issue of formats of question papers for assessing the quality of medical education in India. Question papers based on MCQs (multiple choice questions) are used for both undergraduate and postgraduate medical examinations in India. We would like to highlight some key concerns with the design and conduct of postgraduate medical entrance examinations from a candidate's perspective. As individuals who have been candidates in postgraduate medical entrance examinations at two different time periods in the past few years (Anant Bhan 2002-03, Divya S. Iyer 2008-09), it is our opinion that those who set question papers need to consider several aspects while designing

questions. We also feel that MCQs should not be the sole modality for selection to postgraduate courses.

The way MCQs are framed makes one curious as to whether the intention is to test the candidate's knowledge or to confuse them. Structure-wise, it would help candidates to concentrate on the content of the questions if the number of options were 3, rather than the existing norm of 4 or 5. The use of 3 options has been shown to be effective by Vyas and Supe¹ in terms of evaluating knowledge. A possible drawback is that students who blindly guess answers now have a 1-in-3 chance of getting the answer right compared with 1-in-4 or -5 in the current scenario; it could cause the number of correctly 'guessed' answers to rise.

Examinations at this level need to emphasize on an in-depth assessment of the student's knowledge and competency. Questions with multiple responses (with the possibility of more than one answer being correct) are much better than single correct response MCQs in this regard; such a format is used at the Postgraduate Institute of Medical Education and Research, Chandigarh. When a candidate attempts such a question with multiple answer options, it tests his/her in-depth knowledge, observation skills and efficiency in time management. It often simulates a clinical situation where patients might present with co-morbid conditions or multiple symptoms and signs relating to a medical condition. The entrance examination conducted by Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow requires students to consider each option provided under a particular question and mark those as true or false. For example, if a question was to be set on ECG changes in hyperkalaemia, a student would need to know all the possible ECG findings in hyperkalaemia to answer every option in that question correctly unlike other entrance examination formats where one could get away with piecemeal knowledge about a hallmark finding alone. This format serves to assess thorough familiarity with the subject matter of a candidate in an objective manner within the stipulated time. These innovations could also help reduce the tendency of candidates to mug up previous years' questions and answers from guidebooks.

With India becoming an information technology superpower and the rapid inroads of technology into healthcare and daily lives, thought should be given to a shift from a paper-based examination to that based on a computer interface; the software would be able to move around the order of questions/options, and automatically generate different questions from a master list of questions. This will further help in preventing malpractice in examinations and promote faster publication of results. However, this would need to ensure adequate infrastructure, back-up power, availability of technical help, etc. at all examination centres, apart from secure storage of the master list in reliable servers and storage media to safeguard against hacking.

The focus of entrance examinations also needs to undergo a makeover from testing theoretical knowledge alone to testing clinical acumen as well. The current trend is that doctors take a year or more off after their MB,BS to mug up all the textbooks and guidebooks to prepare for entrance examinations. The practice of medicine is an art, and not just a science; there is a possibility that young doctors might lose their 'clinical touch' during this exercise. Given that there is no efficient standardization of the conduct of the MB,BS examinations all over India (there are only broad guidelines by the Medical Council of India about the way examinations should be conducted and evaluated), it is difficult to estimate a particular candidate's practical skills based on just a theoretical entrance examination. A 2- or 3-stage entrance system would be more apt, which would involve theoretical components, a practical component (could be specialty-based, depending on whether the candidate is interested in a preclinical, paraclinical or clinical discipline) and an interview which tests a candidate's aptitude and inclination for a particular discipline. Such components are used in entrance/licensing examinations such as the

USMLE (USA), PLAB (UK), etc. conducted by other countries.

We feel that postgraduate entrance examinations are meant to weigh the competence of candidates and assess how suitable they are for a particular course. Specialty-based entrance examinations are better suited to this objective. These help gauge a candidate's aptitude and knowledge in a particular discipline more comprehensively. A young doctor who is keen to specialize in Psychiatry does not need to demonstrate in-depth knowledge in other areas such as Surgery or Paediatrics. The Christian Medical College, Vellore conducts specialty-based entrance tests for each subject of interest for candidates in the postgraduate entrance examination. It serves as a suitable way of choosing the right people for the right specialty, and could help ensure that candidates do not choose branches just based on their ranks, but rather pick a specialty course they are most prepared for, and interested in.

We hope that the authorities in postgraduate training institutions and at the national level will review the format and conduct of postgraduate entrance examinations, and bring about much-needed reform in the way these examinations are organized.

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An educationist teaching healthcare professionals?

One of the main objectives of medical education units is faculty development or training medical teachers. Expertise in faculty development can come from either medical faculty trained in education or educationists with an ability to relate to medical education. Medical education in India is an evolving field with medical faculty, in the past few years, undergoing training in medical education technology. Some are even venturing to obtain formal Master's or Doctorate degrees. General educationists with MEd or PhD degrees find it difficult to gain acceptance among the fraternity of medical teachers. I share some lessons that I have learnt over the years from my links with medical education.

I began my career in the 1970s as a lecturer in a college of education in a small town in Karnataka. I moved to the Goa Board of Secondary and Higher Secondary education as a Research Officer. I then moved to Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry (now Puducherry) as a faculty member at the National Teacher Training Centre (NTTC) for health professionals. I reached JIPMER in the midst of a training course and learnt my first lesson—'Try to relate educational principles to the context of medical education.'

I received much support from the director and faculty members at

the NTTC. It was often an uphill task to convince many faculty members to use techniques and acquire skills relating to the evolving field of medical education. Humility and respect for their opinions enabled me to gain acceptance for some of my thoughts and ideas. I learnt my second lesson—'Change is often resisted, but respect your colleagues and juniors and you will earn their goodwill.'

In 1991, I moved to the All India Institute of Medical Sciences (AIIMS) as an Educationist at the newly established K.L. Wig Centre for Medical Education and Technology (CMET). A senior faculty member was in charge of the centre on a part-time basis. I was expected to play a key role in the 2 major activities of the centre—organizing faculty development programmes and providing media services to the faculty. The faculty development activity usually needed inputs of about 20 'adjunct faculty members' who belonged to different departments. This was a challenge, mainly because of the differing perceptions and sensibilities of the large number of people involved. Moreover, the academic milieu of AIIMS had upheld research as a major agenda for basic scientists and patient care as a key role for clinicians. Education was regarded as 'everybody's baby, hence nobody's baby'. Imagine my plight as an educationist.

The second activity (providing in-house media services) was even more challenging as it required handling 20-odd technical staff members with a diverse skill mix such as photography, video, computer graphics and printing—none of these were areas in which I was trained or proficient. I delegated the technical and administrative responsibilities of this activity. Indeed another lesson—'If you can't handle too many things, delegate responsibility and give due credit.'

The past decade has witnessed a rapid expansion of technology in all spheres including medical education. These changes led to a

decline in the need for the skills of some of the technical staff. We increased our training activities and organized many workshops on topics such as the role of the media, effective presentation, assessment strategies, scientific writing and ethics. We targeted not only our own institutional faculty, but also resident doctors, nurses and technical staff, who were indeed vying for in-service training. A policy of 'rotating leadership' encouraged different adjunct faculty members to organize workshops. We organized several workshops at the national level. This step brought visibility to CMET and I benefited as a resource person. Yet another window of opportunity was created by collaborating with professional associations in organizing pre-conference workshops in areas that were the strengths of the CMET. I learnt to—'Go out of the box, and collaborate and cooperate with others.'

So who is better suited to teach health professionals—a medically qualified person or an educationist? Certainly, a medical specialist who has qualified and specialized in medical education. However, such people are difficult to find because the opportunities for acquiring formal qualifications are limited and expensive. Even if full-time positions are created, most medical teachers may not relish the idea of being full-time medical teachers. So can an educationist contribute to medical education? Possibly yes and in a manner akin to a statistician who helps in the role of a biostatistician.

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