



Enhancement of Proficiency in Liaison Psychiatry: An Educational Approach for Declining Misdiagnosis in Primary Care Setting

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ABSTRACT

The occurrence of medical errors in primary care settings is common and the likelihood of errors causing serious harm, as well, is high. It is estimated that around 10-15 percent of clinical diagnoses are incorrect and many patients, who after a while develop significantly more serious medical or neurological disorders, are initially diagnosed as conversion disorder. So, based on a case history design, all decisively medical patients, who had been misdiagnosed by at least one medical specialist as conversion disorder or so on in primary care setting, and accordingly had been referred to psychiatric facilities, during an eighteen months period, have been selected for the present study. Medical illnesses like Hallervorden-Spatz disease, Multiple Sclerosis, Myxoma of the Left Atrium, Epilepsy, and also malignancies like Mesothelioma, Metastatic Bone Tumor, and small cell (oat cell) carcinoma of the lung, were among the most serious medical illnesses that had been mislabeled by non-psychiatric medical specialists, and which had been revealed after repeated assessment that had been asked by a consultant psychiatrist. Careful medical examination, based on adequate clinical skills and knowledge, is necessary for diagnosis or ruling out of medical problems. Enhanced educational curriculums in medical schools, improvement of skills and knowledge of medical students in the field of 'somatic symptom disorder' and consultation-liaison psychiatry, guideline modifications, continuous post-graduation education and system modifications possibly will help to decline the percentage of medical errors.

Key words: Liaison psychiatry, consultative psychiatry, consultation-liaison psychiatry, misdiagnosis, medical error.

BACKGROUND

While patient safety is an important concern in clinical management, there is a lack of studies on medical errors in primary care settings. Medical faults have been defined as an actual or a potential serious lapse in the standard of care provided to a patient, or harm caused to a patient through the performance of a health service or a healthcare professional.¹ According to a meta-analysis, the five most commonly misdiagnosed diseases in primary care settings were: infection, neoplasm, myocardial infarction, pulmonary emboli, and cardiovascular disease.² Also, according to another study, medical mistakes bring about 44,000 to 98,000 preventable deaths and 1,000,000 excess injuries each year in the hospitals of United States of America (USA).³ The World Health Organization (WHO) has also estimated that millions of people suffer injuries directly attributable to medical care, many of which are preventable.⁴ Some countries like the United Kingdom consider recognition and decrease of potential harm as a priority for health care providers.⁵ Moreover, many aspects of primary care such as early presentation of undifferentiated disease⁶, the various patient populations and characteristics, and the multiplicity of caregivers and sites of care render the study of medical errors to be complex.⁷ This is further complicated by the different error reporting methods, definitions and classifications of types of medical errors used by researchers.⁸ It is estimated that between 10-15 percent of medical diagnoses are wrong.⁹ The most common mistakes were those related to delayed or missed diagnoses, followed by treatment errors. Careful medical examination, based on adequate clinical skills and knowledge, is necessary for diagnosis or ruling out of medical problems, especially with taking into account the significance of timely therapeutic maneuvers. Underestimation of signs or symptoms, depreciating systematic medical evaluation and non-holistic analysis of medical presentations can be accounted as chief causes of misdiagnosis of medical illnesses. All of the following case examples, which have been chosen based on a case history design and during an eighteen months period, have been diagnosed awkwardly in the beginning by at least one non-psychiatrist medical specialist as conversion disorder or so on, after adequate medical work up, and accordingly treated or referred to psychiatric facilities. This article tries to give the readers an idea about the aforesaid dilemma, in the ground of

consultation-liaison psychiatry or psychological medicine. Names, dates and locations have been omitted totally to keep the confidentiality of the cases.

1st case: a man with stiffness

A 21 years old man with chief complaint of intermittent spastic torsions of the upper and lower limbs and upper trunk and some mild dyskinetic movements in the mouth area (lips) from 2 years ago had been referred to a psychiatric facility by a family physician, as conversion disorder. After approval of the aforesaid diagnosis by a psychiatrist the patient had been hospitalized in the psychiatric ward and the treatment had been started by antidepressant, antianxiety and some sorts of psychological interventions. But owed to ineffectiveness of prescribed treatments, he was referred to an associate neurologist for consultation. After clinical examination, the diagnosis of conversion disorder (Hysteria) was approved for the second time by the consultant neurologist, who based the diagnosis, as like as the former psychiatrist, on alternating pattern of symptoms and their periodic disappearance, possible adverse effects of prescriptions like medication induced movement disorders, noncompliance of the patient, and the existence of various financial, familial and job-related stressors in his life. But again, due to lack of profit from different models of psychiatric managements, a consultation with a consultant psychiatrist had been asked. After interview, mental state and neurological examination, due to gradual progression of the symptoms, lack of clear and temporal relationship between the symptoms and stresses, occurrence of symptoms in different situations (personal and social), his own distress regarding them (ego-dystonic nature of the symptoms) and some mild enduring lead-pipe rigidity in his upper and lower limbs, an additional neurological consultation was asked for him. This one was performed by a sub-specialist in movement disorders in a credited neurological centre. After detailed neurological examination and finding of an "eye-of-the-tiger" sign (central hyperintensity surrounded by an area of hypointensity) in the globus pallidus on T2-weighted MRI, the patient's primary diagnosis turned to Hallevorden-Spatz (HS) disease (neurodegeneration with brain iron accumulation [NBIA]). So the patient was transferred to the pertained neurological ward for receiving further specialized care and investigation,

especially with respect to mutations in the pantothenate kinase gene (PANK2) on chromosome 20p13.

2nd case: a retarded lady

A 45 years old woman with chief complaint of psychomotor retardation, slurred speech, hostility, social isolation, insomnia, delusional misidentification, agitation, suspiciousness, depression, discontinuous stiffness of entire of the body, loss of appetite and flexible levels of awareness in the preceding year, had been referred by the related clinician (a general physician), to a state medical hospital for necessary checkup. Initial examination by an internist and neurologist in the next days and also the laboratory studies and MRI were mostly non-diagnostic. Thus, she had been diagnosed as a case of functional psychosis and was prescribed antipsychotic (haloperidol) and antidepressant (imipramine) by the consultant psychiatrist. But due to lack of beneficial help and also worsening of the patient's state, she was referred with the diagnosis of catatonic schizophrenia or psychotic depression, to a psychiatric hospital, where the authenticity of the above diagnoses was acknowledged once more by a consultant neurologist, who had been requested by the psychiatrist for ruling out of organic causes. But after interview by the consultant psychiatrist, due to restriction of stiffness to the lower part of the body, sporadic incontinence, discernible disorientation and appearance of locomotor signs before the emergence of psychiatric symptoms, she was asked again for a third neurological consultation. So this time, after lumbar puncture (LP) and finding an elevated IgG index and oligoclonal bands, and also a new MRI, which showed a lot of demyelinating plaques around the ventricles, the primary diagnosis turned to Multiple Sclerosis and so she was transferred to a credited neurological facility to receive the necessary care and therapy.

3rd case: an exhausted young woman

A 26 years old woman was experiencing more than usual fatigue, sleep problem, alternating stammering, irritability, anxiety, easily crying, slight retardation and social isolation during the last five months before her initial meeting with a consultant psychiatrist. Primary medical checkup by the primary care physician and clinical assessment by a consultant neurologist was not in

favor of any precise medical origin, particularly while psychosocial stresses like breaking up with her fiancé and economical problems were palpable throughout her history. As a result, she had been diagnosed by primary care physician as depression and conversion disorder and treated by fluoxetine and benzodiazepine (alprazolam) for a few months with no palpable profit. So she had been referred to a counselor psychiatrist. After interview and mental status examination, due to lack of clear cognitive signs of depression, temporal mismatch between diagnosed stammering and occurrence of stresses, and some disagreement of the patient with severity of somatic symptoms assigned by her family to her, then she had been referred for an additional neurological consultation. After MRI, a lot of demyelinating plaques were found in the paraventricular area of the brain and subsequently the primary diagnosis turned to Multiple Sclerosis, and she was referred to a neurological facility for further exploration and receiving necessary treatment.

4th case: a nervous mother

A 30 years old mother was referred to a family physician with chief complaint of anxiety, palpitations and sleep problems during the last few months. After initial clinical exam and checkup, and in spite of lack of any kind of accountable stress, since there were no suspicious findings, she was diagnosed as a kind of anxiety disorder by her physician and the treatment was started by imipramine (25-50 mg daily). But since after two weeks of treatment, she could not feel well, she had been advised to make an appointment with a cardiologist regarding her subjective sense of palpitation, in spite of apparently normal electrocardiogram (ECG) and heart sounds. After traveling to another city and initial checkup by a cardiologist, she was prescribed propranolol (30 mg daily) with the diagnosis of prolapsed mitral valve. But again, after returning back and another two weeks, since she could not feel well, she was visited again by the same general physician. This time, since an intermittent, low pitch sound could be heard during auscultation in left recumbent position, she was referred to another consultant cardiologist. At this time, after accomplishment of an echocardiography, she had been transferred emergently to an accredited heart center in the capital city, by primary diagnosis of giant Myxoma of the Left Atrium. After a successful cardiovascular surgical

treatment, the aforesaid sign and symptoms disappeared completely.

5th case: a young man with sore neck

A 25 years old man was complaint of dull neck pain and sleep problem from at least two year ago. After a number of medical checkups and different treatments by various doctors, including GPs, orthopedic surgeon and neurosurgeon, finally it had been diagnosed as a kind of psychiatric problem and somatization by his family physician and so had been advised to go for a psychiatric consultation. So, after an initial interview by the psychiatrist and due to presence of mild dysphoria, anxiety, non-refreshing sleep, nervousness, and slight pain in the head and neck, which was not extremely sensitive to touch or flexion, Doxepine (25-50 mg/day) had been prescribed for him with the primary diagnosis of depression and pain disorder associated with psychological factors. The prescribed tricyclic improved the majority of the abovementioned psychiatric symptoms, except than the subjective feeling of dull neck ache, which could yet disturb the sleep. After a few days and in an afternoon suddenly the patient had suffered a generalized tonic-clonic seizure, which was observed by family members, and so had been referred to a consultant neurologist. Following initial work up, including computed tomography scan (CTS), laboratory examinations, and ruling out of electrolyte, metabolic and medical causes, and based on evident spike and wave pattern in electroencephalography (EEG), the primary diagnosis of epilepsy was established for the patient and necessary treatment with antiepileptic drugs had been started. After a few weeks, his long-standing aching pain in the neck, which was probably due to unnoticed nocturnal ictal muscular spasms, disappeared permanently.

6th case: A technician with bothersome stresses

A 37 years old male technician was referred to a consultant psychiatrist, because of increasing suffering from anxiety, sleep problem and subjective sense of depression, breathlessness and slight weight loss, in the preceding four months. While bothersome environmental and occupational stresses were evident in his history, exploration regarding a sudden pleural effusion in him in an accredited pulmonary center in the capital city resulted

to no understandable cause or diagnosis. Since the patient did not seem to be worried regarding that at all and based on the aforesaid stressors and symptoms, he was prescribed fluoxetine (20-40 mg daily) with a possible diagnosis of mixed anxiety-depressive disorder. After a few weeks and in spite of satisfactory amelioration of anxiety and depression and his subjective sense of well being, nonetheless, losing weight had not stopped, and since its rate or speed was beyond the SSRI's known side effect, as a weight reducer, therefore he was referred again to the previous pulmonary center for a new consultation and checkup. After clinical examination, chest radiography, computed tomography scan of the chest and plural biopsy, the patient was recognized as a case of Mesothelioma, and got through the required managements.

7th case: A tense worker

A 36 years old obsessive male worker with chief complains of anxiety, sleep problem, depression, and insignificant physical weakness, lack of energy, loss of appetite and negligible weight loss during the last few months had been referred for a psychiatric consultation. There was obvious history of annoying occupational distresses and multiple family conflicts in the past few months, before initiation of the abovementioned ailment. The routine laboratory and physical examination by his family physician (internist), though adequate, was inconclusive. Thus he was prescribed SRI (clomipramine, 50-75 mg/day) for a probable diagnosis of mixed anxiety-depressive disorder. But in spite of fair amelioration of anxiety and depression, nevertheless, mild weakness and lack of energy did not respond equally. Therefore after a few weeks he was referred for an additional psychiatric consultation, and this time after physical examination, due to existence of asymmetrical and true weakness and aching in upper and lower limbs, lack of cognitive ideations of depression and somewhat temporal precedence of somatic symptoms in comparison with psychiatric symptoms, he was referred to an orthopedic – rheumatologic service for a new checkup. After clinical assessment, chest radiography, computed tomography scan of the chest, and total body imaging (Bone scanning), the primary diagnosis of Metastatic Bone Tumor had been identified for him and he got through the standard therapeutic managements. Accordingly, the aforesaid weakness of the limbs could be due to systemic

symptoms of malaise, anorexia, cachexia, weight loss and bone pain, as metastatic extra-pulmonary manifestations of small cell (oat cell) carcinoma of the lung, which was meanwhile his primary suspicious cause of malignancy.

DISCUSSION

Liaison psychiatry, also known as consultative psychiatry or consultation-liaison psychiatry is the branch of psychiatry that specializes in the interface between medicine and psychiatry, usually taking place in a hospital or medical setting. Liaison psychiatry has areas of overlap with other disciplines including psychosomatic medicine, health psychology and neuropsychiatry.¹⁰ According to Segen's Medical Dictionary (2012) and Mosby's Dictionary of Complementary and Alternative Medicine (2005) misdiagnosis means the incorrect diagnosis of a morbid condition, and an inaccurate assessment of a patient's condition, respectively. So harm may be inflicted on the patient as the result of an incorrect therapeutic approach. Misdiagnosis is the leading cause of medical error in out-patient facilities. Since the National Institute of Medicine's report, "To Err is Human," in 1999 found that each year up to 98,000 hospital patients die from preventable medical errors in the USA, government and private sector efforts have focused on inpatient safety.¹¹ Human error has been implicated in nearly 80 percent of adverse events that occur in complex healthcare systems. The vast majority of medical errors result from faulty systems and poorly designed processes versus poor practices or incompetent practitioners.¹² Practitioner risk factors include, as well, fatigue¹³, depression and burnout¹⁴. Factors related to the clinical setting include diverse patients, unfamiliar settings, time pressures, and increased patient to nurse staffing ratio.¹⁵ According to a study for determining the extent of diagnostic inaccuracies and management errors in public funded primary care clinics, diagnostic errors were present in 3.6% of medical records and management errors in 53.2%. For management errors, medication errors were present in 41.1% of records, investigation errors in 21.7% and decision making errors in 14.5%. A total of 39.9% of these errors had the potential to cause serious harm. Problems of documentation including illegible handwriting were found in 98.0% of records. Nearly all detected errors (93.5%) were considered preventable. So, while the occurrence of medical errors was high in primary care clinics, particularly with

documentation and medication errors, almost all were preventable, too.¹⁶ In another study aimed to develop an intervention to reduce medical errors and to determine if the intervention can reduce medical errors in public funded primary care clinics, a controlled interventional trial was conducted in 12 conveniently selected primary care clinics. Random samples of outpatient medical records were selected and reviewed by family physicians for documentation, diagnostic, and management errors at baseline and 3 months post intervention. The intervention package comprised educational training, structured process change, review methods, and patient education. A significant reduction was found in overall documentation error rates between intervention and control groups. Within the intervention group, overall management errors reduced from 54.0% to 36.6% and medication error from 43.2% to 25.2%. This low-cost intervention was useful to reduce medical errors in resource-constrained settings.¹⁷ Back to our discussion, conversion disorder is commonly encountered in neurologic wards but may also involve patients attending a primary care setting. The term refers to a number of symptoms, both motor (such as paralysis, dysphasia, ataxia, tremor, aphonia, and seizures) and sensory symptoms, (diplopia, blindness, deafness, and numbness) which are medically unexplained and presumably have psychogenic origin.¹⁸ Other rare and controversial forms of conversion disorder, and also anxiety disorders and psychotic disorders have been reported frequently as mislabeled diagnosis rather than genuine organic diseases.¹⁹ Though the diagnosis of, for example, conversion disorder requires that the symptom is not explained by neurological disease, it should not be diagnosed simply for the reason that results from initial investigations are normal or because the symptoms are "bizarre." There must be clinical findings that show clear evidence of incompatibility with neurological disease. Internal inconsistency at examination is one way to demonstrate incompatibility (i.e., demonstrating that physical signs elicited through one examination method are no longer positive when tested in a different way). It is important to note that the diagnosis of conversion disorder, depression, anxiety and psychotic disorders should be based on the overall clinical picture and not on a single clinical finding.²⁰ As like as some of the aforementioned cases, the most important differential diagnosis is all the time the neurological disease that might better explain the symptoms. On the other hand,

conversion disorder may coexist with neurological disease. Such comorbidity is found in approximately 5% of referrals to neurological clinics.²⁰ There are two salient aspects regarding the relationship between organic illness and conversion symptoms, which are extremely important in understanding the complexities of clinical diagnosis in conversion disorder. First, there are a substantial number of cases whose initial diagnosis of conversion disorder is changed finally to organic illness. Second, there is a high incidence of patients with conversion reactions and concomitant organic illness. Clinicians who overlook these two important principles will experience many problems in understanding and managing this group of patients. Conversion reactions can occur in isolation, as part of another psychiatric disorder, or as part of a neurological disorder. As it is currently conceptualized, conversion disorder will likely become more of a rarity in the clinical setting.¹⁸ Although no one has calculated the cost of the misdiagnosis of medical conditions, it is obvious that, if the mistake in diagnosis results in the deaths of patients, then the price is extremely high. So, if the diagnosis of conversion disorder is given, the clinician is well advised to carefully monitor ongoing symptomatology to ensure immediate detection of an organic process. Additionally, more comprehensive instructive courses, for improvement of skills and knowledge of medical students in the field of 'somatic symptom disorder'²⁰ and consultation-liaison psychiatry possibly will help to decline misdiagnosis and negligence. Current medical training and rehearsal can not overlook the vital role of liaison psychiatry and place of psychiatry in contemporary clinical practice, since the reciprocal connection between mind and body is more complex than what was thought before in primary care setting.

CONCLUSION

The occurrence of medical errors in primary care setting is common and the likelihood of faults causing serious harm is high, of which most are considered preventable, curable or manageable, if treatment could be initiated as soon as possible. Attention to thorough history of development of symptoms and careful medical examination, in addition to complete documentation and adequate attention to prescriptions are maneuvers that are likely to result in decrease of mistakes. A multiparty effort is necessary to improve patient safety in primary

care clinics. This should include improved instructive curriculums in medical schools including better courses in psychosomatic medicine or consultation-liaison psychiatry, guideline modifications, continuous post-graduation education, system modifications, and monitoring of practice. Further research regarding the frequency and types of errors, and interventional studies to reduce medical faults possibly will lessen the dilemma.

Conflict of interest: None.

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