interaction fears; (2) observation fears; and (3) performance anxiety (in criterion A). Thus fear of performance in public was deprioritized compared to social interaction in DSM-5.

Autism spectrum disorders have been of heightened concern in recent years. Persistent impairment in reciprocal social communication and social interaction (Criterion A) and restricted, repetitive patterns of behavior, interests, or activities (Criterion B) are their essential features[1]. Initial interview with individuals who have generalized SAD frequently cannot correctly assess social communication capacity because of patients' anxiety in the appointment. However, careful observation in future appointments and additional assessment will reveal adequate reciprocal social communication and social interaction with familiar or intimate partners. Autism spectrum disorders have been of heightened concern in recent years. Persistent impairment in reciprocal social communication and social interaction (Criterion A) and restricted, repetitive patterns of behavior, interests, or activities (Criterion B) are their essential features[1]. Initial interview with individuals who have generalized SAD frequently cannot correctly assess social communication capacity because of patients' anxiety in the appointment. However, careful observation in future appointments and additional assessment will reveal adequate reciprocal social communication and social interaction with familiar or intimate partners.

Autism spectrum disorders have been of heightened concern in recent years. Persistent impairment in reciprocal social communication and social interaction (Criterion A) and restricted, repetitive patterns of behavior, interests, or activities (Criterion B) are their essential features[1]. Initial interview with individuals who have generalized SAD frequently cannot correctly assess social communication capacity because of patients' anxiety in the appointment. However, careful observation in future appointments and additional assessment will reveal adequate reciprocal social communication and social interaction with familiar or intimate partners. As with schizoid personality disorder, the social avoidance of schizophrenia should be distinguished from the social fear of SAD. However, due to the chronic course of generalized SAD, it can be associated with schizophrenia, though predictors have not been found. The differential diagnoses for these psychiatric diseases must be studied carefully. We aimed to review these common and concerning points about these three disorders.

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SYMPOSIA ABSTRACT: 595

Tic Disorders and Comorbidity: Approaches to Treatment Refractory Cases with Tourette's Syndrome

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ABSTRACT

Tourette's syndrome (TS) is a complex neurodevelopmental disorder marked by both motor and phonic tics over a period of at least 1 year with the onset in childhood or adolescence. Although symptoms usually decline by adulthood, a significant number of patients fail to respond conventional medical and behavior treatments. Most of the patients with TS have associated psychiatric comorbidities which may have a role of apparent refractoriness. First, concomitant psychiatric comorbidities, the current definitions and clinical characteristics of treatment refractory TS will be presented. Then, the strategies for the management of treatment refractory TS, potential new treatments such as transcranial magnetic stimulation (TMS), deep brain simulation (DBS) and novel pharmacological treatments will be discussed.

Finally, two cases of treatment refractory TS and their follow-up period will be presented.

Comorbidities

A recent cross-sectional study of over 1000 TS patients found that 86% of all patients had at least one psychiatric disorder, and 58% had 2 or more psychiatric disorders (Hirschtritt et al., 2015). Psychiatric comorbidities contribute essentially to functioning and to limit treatment response in TS, and might also increase the likelihood of receiving medical therapy for tics.

ADHD is the most common comorbidity in the TS patients, ranging between 60 and 80 %, is the leading factor affecting disruptive behavior in TS (Kumar, Trescher, & Byler, 2016). ADHD symptoms precede the onset of tics by 2–3 years and begin around the age of 3–5 years. The hyperactive subtype is predominant in the younger patients, whereas inattentive type is more common in adolescents. Untreated ADHD may also complicate therapeutic interventions such as habit reversal therapy (HRT), making them less effective. The prevalence of OCD ranges from 11 to 80 % of patients with TS. The clinical presentation of OCD symptoms in TS patients can be different than the typical presentation of patients with primary OCD. TS patients are found to have greater rates of symmetric obsession, obsessional counting, and "just right" perception, however primary OCD patients reported higher rates of cleaning rituals, compulsive washing, and fears of contaminations. Malignant TS, which has life threatening symptoms or requires hospitalization, is found strongly associated with the presence of OCD or obsessive-compulsive behaviors. In fact, OCD may contribute more to tic severity than other comorbid conditions (Kious, Jimenez-Shahed, & Shprecher, 2016). There has been a significantly increased prevalence of impulse control disorder (especially intermittent explosive disorder) in TS patients. Depressive symptoms also found to present thirteen to seventy-six percent in TS. Depression has been shown to be associated with social stigma such as bullying, teasing, and receiving derogatory nicknames in TS children. Twelve to sixty-two percent of patients with TS reported to have various sleep problems such as nightmares, night terrors, somnambulism, trouble initiating sleep, and restlessness (Kumar et al., 2016). There are no reliable estimates regarding treatment-refractory, and there is little known about the mechanisms that promote refractoriness. Greater tic severity in childhood and early fine motor deficits predicts tic persistence in adulthood. Reductions in total caudate volume in childhood found to be correlated with tic severity in early adulthood.

Definitions and clinical characteristics of treatment refractory TS

It is crucial to carefully assess the adequacy of treatment trials and the reasons they appear to have failed before declaring a patient to be treatment-refractory. This reasons could be incorrect diagnosis, insufficient doses, side effects, inaccessibility to available therapies (including expert psychiatric care and behavioral therapy). TS should be considered truly treatment-refractory if multiple, well-established interventions, including psychotherapy, fail to produce sufficient treatment response either alone or in combination, and there has been adequate control of comorbid psychiatric conditions. The most recent and detailed definitions of treatment-refractory TS have been suggested through guidelines for the selection of patients for DBS: a DSM-5 diagnosis of TS, involvement of ethics committee for cases younger than age 18 years, tics as the major source of disability, with YGTSS total tic severity upper than 35/50, video documentation of movements, failure of conventional therapies (medications from 3 pharmacologic classes), and a trial of CBIT if feasible. Additionally, appropriate documentation and treatment of psychiatric comorbidities, stable medical condition and psychosocial status, and the absence of suicidal or homicidal ideation for 6 months are also recommended.

Management of treatment refractory TS:

Repetitive transcranial magnetic stimulation (rTMS)

rTMS is non-invasive, safe and well-tolerated neuromodulation technique, has been utilized in a variety of psychiatric and neurologic disorder. An average reduction of YGTSS scores of 34% and improvement of comorbid conditions are demonstrated in two open-label trials of rTMS. A recent study in adults had less encouraging results which reported a trial of deep rTMS in 10 adult patients with TS with or without OCD. Subjects tolerated the intervention well, but there was also no significant reduction in tic severity, except in the subgroup of patients with comorbid OCD. Recently a randomized controlled study could not find significant difference in the reduction of YGTSS scores between the rTMS group and sham. Larger, well-controlled trials of rTMS are needed to identify the optimal stimulation parameters and paradigms. Additional clinical trials are currently under way to address this need, as listed in the US clinical trials database (www.clinicaltrials.gov: NCT02356003, NCT00965211).

Deep Brain Stimulation (DBS)

DBS is emerging as a treatment option for medically intractable patients. Due to its invasive nature and the possibility of remission or significant symptomatic improvement in TS with age, especially children and adolescent patients must be carefully selected. On the other hand, adolescence is a crucial time period, which identity formulation, psychosocial and academic development both occur. The chance for greater symptom control via DBS during this time might also would result with better psychosocial outcomes in these severe cases. In a recent meta-analysis, including 156 cases from 57 eligible studies, DBS resulted in a significant improvement of 52.68% (IQR = 40.74, $p < 0.001$) in the YGTSS. Analysis of controlled studies significantly changed stimulation versus off stimulation with a standardized mean difference of 0.96 (95% CI: 0.36– 1.56). Different target points revealed significant YGTSS reductions after stimulation of the thalamus, the posteroventrolateral part and the anteromedial part of the globus pallidus internus, the anterior limb of the internal

capsule and nucleus accumbens (Baldermann et al., 2016). There is limited data about the long-term efficacy of DBS for refractory TS, but existing reports are mainly positive. It was found that patients continued to demonstrate reductions in tic severity and obsessive-compulsive behaviors, and required less medication for TS and for psychiatric comorbidities. Adverse effects can be limited the use of DBT and can be divided into three categories, which are surgical, stimulation-related, or hardware-related. Reduction in energy levels, psychosis, hypomania and anxiety was reported as psychiatric symptoms. It is also suggested that patients with TS may be at increased risk of post-surgical infection due to compulsive touching or picking of the wound or scar.

Electroconvulsive Therapy (ECT)

ECT is shown to be effective and less invasive neuromodulation technique for treatment-refractory TS. Several case reports have subsequently been published with positive results (Kious et al., 2016). There are no controlled studies involving ECT for TS, and few reports involving TS that has not concomitant comorbid psychiatric illness. ECT should be considered for TS primarily in emergency situations (e.g., severe self-injurious behavior), or when there are comorbid psychiatric conditions that ECT is also effective.

Novel Pharmacotherapies

Newer treatments for TS with a growing evidence-base include anticonvulsant agents (Topiramate), vesicular monoamine transporter inhibitors (Tetrabenazine), glutamatergic agents including D-serine, riluzole, nacetylcysteine (NAC), and acamprosate (Kious et al., 2016).

Cases

Two treatment resistant TS cases (16 years old girl and 10 years old boy) and their follow up period (including DBS) will be presented and discussed.

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SYMPOSIA ABSTRACT: 598

Forensic Medicine Institution: History and Organization

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ABSTRACT

In Turkey, the first organization about forensic medicine was found in 1839. It was found a as 'Tıbbi Kanuni' (Forensic Medicine) in the educational program of 'Mekteb-i Tıbbiyye-i Şahane' (the name of the Istanbul School of Medicine in Ottoman period). In 1917, Forensic Medicine Association was separated from the Health Service General Management and joined with the Ministry of Justice and Adli Tıp Müessesi ve Meclisi was founded by the law number 225. February 19th, 2003 by law number 4810, April 4th, 1982 by law number 2659, it was established under the Ministry of Justice. Summary of the duties; to declare scientific and technical opinion about issues related with forensic medicine which were send by the courts and judicatures. Forensic Medicine Institution consists of; Forensic Medicine Institution Chairmanship, Forensic Medicine Chairmen Council, Forensic Medicine General Council, Forensic Medicine Specialized Council and Country Organization consist of Branch Offices and Forensic Medicine Group Chairmanships. Every specialized council consists of a chairman, two forensic medicine specialists, and other members whose number and specialties are defined separately for each council. There are 6 specialized councils, each have different members and duties. There are 6 Specialty Councils, each have different members and duties. The ones related to the psychiatry are 4th and 6th Specialty Councils and Observation Specialty Council (Gozlem Ihtisas Dairesi). Observation Specialty Council's duty is to observe the people who are sentenced to be observed by the councils and judiciaries and to produce official reports from the results of these observation.

KEYWORDS

Forensic medicine; specialized council; observation department; psychiatry