

Thoracic Sympathectomy In Social Phobia: A Pilot Study

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Citation

S Kargar, M Yasini, V Ayatollahi. *Thoracic Sympathectomy In Social Phobia: A Pilot Study*. The Internet Journal of Surgery. 2005 Volume 7 Number 2.

Abstract

Social phobia is a neglected disorder, which can cause very debilitating consequences in patients' lives. The patients tend to isolate and suffer from co morbid disorders such as depression, other anxiety disorders, and drug and alcohol abuse. Traditional treatment methods such as medication and psychotherapy do not help everyone.

A prospective, uncontrolled follow-up study with 15 social phobic patients was performed by unilateral endoscopic sympathetic block of the upper thoracic ganglia. The method is reversible by taking the compression block away, if needed. The selected patients had conservative treatment resistant social phobia according to DSM IV TR. Structured interview, Davidson's modified brief social phobia scale, and Liebowitz Quality of life questionnaire were used both pre- and postoperatively to assess the value of the treatment.

All aspects of social phobia, both somatic and psychological, were highly significantly improved. Reflex sweating as the only remarkable side effect was less than in most series for other indications with sympathetic ablative surgery elsewhere.

Endoscopic sympathetic block is recommended as the treatment of choice in severe, conservative therapy resistant social phobia.

INTRODUCTION

Social phobia is an anxiety disorder which can be described as a strong, persistent fear of situations where humiliation or embarrassment may occur.⁽¹⁾ persons with social phobias (also so called social anxiety disorder) have excessive fears of humiliation or embarrassment in various social setting , such as in speaking in public , urinating in a public rest room (also called shy bladder) and speaking to a date .A generalized social phobia , which is often a chronic and disabling condition characterized by a phobic avoidance of most social situations. The life time prevalence of social phobia has been reported to be 3 to 13 percent .The 6- month prevalence for social phobia is about 2 to 3 per 100 persons. In epidemiological studies, females are affected more than males, but in clinical samples, the reverse is often true. The reason for these varying observations is unknown^(1,2). The peak age of onset for social phobia is in the teens, although onset is common as young as 5 years of age and as old as 35⁽³⁾. Co morbidity in social phobia reports from a range of 30 to 50 percent. Common combed disorders with phobias include anxiety, mood and substance –related disorders^(2,3,4).

The pathogenesis of social phobia, once it is understood,

may prove to be a clear model for interactions between biological and genetic factors, and environmental factors. Affected persons may have inherited a particularly strong vasovagal reflex, which may become associated with phobic emotions .Some children possibly have a trait characterized by a consistent pattern of behavioral inhibition. This trait may be particularly common in the children of parents who are affected with panic disorder, and it may develop into sever shyness as the children grown older .at least some person with social phobia may have exhibited behavioral inhibition during childhood. Perhaps associated with this trait , which is thought to be biologically based ,are the psychologically based data indicating that the parents of persons with social phobia were ,as a group, less caring , more rejecting, and more overprotective of their children than were other parents. Some social phobia research has referred to the spectrum from dominance to submission observed an animal kingdom⁽⁵⁾

The success of pharmacotherapies in treating social phobia has generated two specific neurochemical hypotheses about two types of social phobia⁽⁶⁾. Specifically, the use of Beta adrenergic receptor antagonists for example, propranolol for

performance phobias (such as public speaking) has led to the development of an adrenergic theory for these phobias.

Patients with performance phobias may release more norepinephrine or epinephrine, both centrally and peripherally, than do nonphobic persons, or such patients maybe sensitive to a normal level of adrenergic stimulation⁽⁷⁾

The observation that monoamine oxidase inhibitors(MAOIs)may be more effective than tricyclic drugs in the treatment of generalized social phobia, I combination with preclinical data, has led some investigators hypothesize that dopaminergic activity is related to pathogenesis of the disorder. One study has shown significantly lower homovanilic acid concentrations. Another study using single photon emission computed tomography (SPECT) demonstrated decreased striatal dopamine reuptake site density. Thus some evidence suggests dopaminergic dysfunction in social phobias ⁽⁸⁾.First degree relatives of persons with social phobia are about three times more likely to be affected with social phobia than are first-degree relatives of those without mental disorders. And some preliminary data indicate that monozygotic twins are more often concordant than are dizygotic twins, although in social phobia it is particularly important to study twins reared apart to help control for environmental factors ^(9,10,11)

The function of the autonomic nervous system is divided so that the parasympathetic system spares central nervous system energy and the sympathetic system makes extra energy available and consumes it. The sympathetic nervous system then prepares our body for emergency and it always functions when our conscious or even unconscious mind notices a need for defense or to provide energy ^(8,12). A surgical procedure, where the upper thoracic sympathetic ganglions are ablated, either with cauterization or clamping with metallic clips, has been used to treat sweating of the hands and facial blushing for decades. Instead of ablating large areas of sympathetic trunk, which can cause severe side-effects such as reflex sweating of the body, the surgical procedure is nowadays carried out in a more precise symptom-mediating level of uppermost thoracic sympathetic ganglia^(13,14). Blushing, hyperhidrosis of palms and head, and trembling are common in social phobia, and they seem to be provoked by the activation of the sympathetic nervous system. Preliminary studies show that some social phobia patients may benefit from the endoscopic sympathetic block (ESB). If the patient with generalized social phobia has not received help with adequate medication or psychotherapy,

the ESB may be a new possible treatment of choice so we decided to do ESB in refractory social phobia cases.

MATERIAL AND METHODS

This is an open, uncontrolled, prospective follow-up study of 15 patients, which have had left-sided endoscopic sympathicotomy or sympathetic block between 2002 and 2004. Both quantitative and qualitative research methods were used in the study. The research group had suffered from social phobia for over five years and they hadn't received any help from former treatment with medication and/or psychotherapy. They were interviewed by a doctor (operating surgeon and/or psychiatric trainee), a psychologist or a professor of psychiatry, and the diagnoses of social phobia were made according to DSM IV TR. The questions was about the experiences from childhood and adolescence, and if there was any kind of insecurity in their developmental years, the insecurity was categorized to psychological and physical violence, alcoholism of a family member, being a victim of school torment, and high religious demands in the primary family. Those categories were selected because their high prevalence in the patient group was noticed earlier. The patients had sought help from a private clinic after having received no help from traditional treatment methods. If former treatment had been inadequate, they were offered medication and/or psychotherapy and if the result was unsatisfactory, and there were no contraindications for the surgical procedure, it was accomplished. The patients with panic disorder, borderline personality disorder, and untreated depression during the decision about the operation, were excluded. Somatic contraindications were hyperthyroidism, pheochromocytoma, and any state of hormonal imbalance. Patients gave a written consent to the operation after having had complete information about the procedure and possible side effects.

The surgical procedure was made endoscopically under general anaesthesia. The procedure was performed mainly in left side from 3and 5 intercostals space by 0 degree/10 mm diameter endoscopic lenses .The main method nowadays is to clamp the thoracic sympathetic ganglions at the level of thoracic 2-4 ganglions with metallic clips in non of the patients we don't use the cauterization.

The severity of the psychic and physical symptoms was scored 1 to 5 using a modified version of Davidson's brief social phobia scale ⁽¹⁵⁾before the operation, at the control visit one month after operation, after 6 months of operation

and then once a year (Table 1). The severity of the reflex sweating of the trunk was also included to the symptom questionnaire because it is known to be the most common side-effect of the operation. The satisfaction to the result was also asked at the same time, and it was scored from 1 to 5 and different aspects of satisfaction were also estimated (₁₆). These aspects of satisfaction are common in definitions of quality of life. The statistical analysis was carried out using one dimensional, and in comparing the different operation methods, two dimensional variance analysis.

RESULTS

The patients were between 19 and 37 years old, 7 were female and 8 were male. 3 of male and 4 of female were single and the others were married. All of them had an experience of medical treatment failure after 3-5 years. 6 of male and one of females were opium addicted. All of male were smoker but none of female were smoker. None of them were alcohol user. The average score for childhood insecurity was 3.5 in this study (as mentioned in questioner). Mean Davidson social phobia score before operation were 12 (8 -17) and after 30 days the mean was 19 (15-23) $PV=0.002$, and 3 months after operation it was 22(18-25) $PV=0.0001$. Quality of life (liebowitz) score mean was 8 before operation and 30 days after operation was 26 and three months after operation was 28 $Pv=0.0002$

DISCUSSION

The etiology of most anxiety disorders, although not fully understood, has come into sharper focus in the last decade. In broad terms, the likelihood of developing anxiety involves a combination of life experiences, psychological traits, and/or genetic factors. The anxiety disorders are so heterogeneous that the relative roles of these factors are likely to differ. Some anxiety disorders, like panic disorder, appear to have a stronger genetic basis than others (National Institute of Mental Health [NIMH], 1998), although actual genes have not been identified. Other anxiety disorders are more rooted in stressful life events.

It is not clear why females have higher rates than males of most anxiety disorders, although some theories have suggested a role for the gonadal steroids. Other research on women's responses to stress also suggests that women experience a wider range of life events (e.g., those happening to friends) as stressful as compared with men who react to a more limited range of stressful events, specifically those affecting themselves or close family members.

What the myriad of anxiety disorders have in common is a state of increased arousal or fear (₁₇). Anxiety disorders often are conceptualized as an abnormal or exaggerated version of arousal. Much is known about arousal because of decades of study in animals and humans of the so-called "fight-or-flight response," which also is referred to as the acute stress response. The acute stress response is critical to understanding the normal response to stressors and has galvanized research, but its limitations for understanding anxiety have come to the forefront in recent years (_{18,19,20})

The DSM-IV-TR diagnostic criteria for social phobia is a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing. Note: In children, there must be evidence of the capacity for age-appropriate social relationships with familiar people and the anxiety must occur in peer settings, not just in interactions with adults. Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally predisposed Panic Attack. Note: In children, the anxiety may be expressed by crying, tantrums, freezing, or shrinking from social situations with unfamiliar people. The person recognizes that the fear is excessive or unreasonable. Note: In children, this feature may be absent. The feared social or performance situations are avoided or else are endured with intense anxiety or distress. The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia. In individuals under age 18 years, the duration is at least 6 months. The fear or avoidance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition and is not better accounted for by another mental disorder (e.g., panic disorder with or without agoraphobia, separation anxiety disorder, body dysmorphic disorder, a Pervasive developmental disorder, or schizoid personality disorder). If a general medical condition or another mental disorder is present, the fear in criterion A is unrelated to it, e.g., the fear is not of stuttering, trembling in Parkinson's disease, or exhibiting abnormal eating behavior in anorexia nervosa or bulimia nervosa. It is generalized: if the fears include most social situations (also consider the additional diagnosis of avoidant personality disorder (₂₁))

Associated features include depressed mood somatic/sexual dysfunction, addiction ,anxious/fearful/dependent personality .Differential diagnosis of social phobia is panic disorder with agoraphobia; agoraphobia without history of panic disorder; separation anxiety disorder; generalized anxiety disorder; specific phobia; pervasive developmental disorder; schizoid personality disorder; avoidant personality disorder; associated features of many other mental disorders; anxiety disorder not otherwise specified; performance anxiety, stage fright, and shyness.

Social phobia tends to have its onset in late childhood or early adolescence. Social phobia tends to be a chronic disorder, although as with other anxiety disorders, prospective epidemiological data are limited. Both retrospective epidemiological studies and prospective clinical studies suggest that the disorder can profoundly disrupt the life of an individual over many years. This can include disruption in school or academic achievement and interference with job performance and social development. (1, 2)

Cognitive-behavior therapy is also very useful in treating social phobia. The central component of this treatment is exposure therapy, which involves helping patients gradually become more comfortable with situations that frighten them. The exposure process often involves three stages. The first involves introducing people to the feared situation. The second level is to increase the risk for disapproval in that situation so people build confidence that they can handle rejection or criticism. The third stage involves teaching people techniques to cope with disapproval. In this stage, people imagine their worst fear and are encouraged to develop constructive responses to their fear and perceived disapproval. (15)

Cognitive-behavior therapy for social phobia also includes anxiety management training - for example, teaching people techniques such as deep breathing to control their levels of anxiety. Another important aspect of treatment is called cognitive restructuring, which involves helping individuals identify their misjudgments and develop more realistic expectations of the likelihood of danger in social situations. (16)

The most studied and probably effective treatment for social phobias is behavioral therapy .The key aspect of successful treatment are the patients commitment to treatment, clearly identified problems and objectives and available alternative strategies for coping with the feelings.

Because endoscopic sympathetic block has widely used regarded as the treatment of choice for basically the same physical symptoms that occur in social phobia (17, 18) and because many biological studies indicate the high probability of sympathetic over activity of patients with social phobia, it was ethically sound to use surgical sympathetic block for carefully selected patients with severe and chronic social phobia resistant to psycho- and pharmacotherapy.

The physical symptoms of social phobia might be eliminated by blocking the sympathetic system in the upper thoracic level with a surgical procedure (5, 8) sympathectomy was first used to treat the exophthalmia of the Basedow disease (19), and angina pectoris (20) in the late 19th century and early 20th century. Its beneficial effect in the treatment of facial sweating was noticed already in the 1930's, and in the palmer sweating in the 1950's, when the procedure already was carried out endoscopically botulinum injections are thought to be superior to the sympathectomy in the treatment of plantar hyperhidrosis, but in either palmar or axially hyperhidrosis the sympathectomy is recommended). For the treatment of the blushing this method was first proposed in 1985 .In stead of eliminating the upper thoracic sympathetic ganglia with sympathectomy, the procedure is now-lays mainly carried out by blocking the ganglia by clamping (sympathectomy), which is a reversible procedure and causes much less side effects (21) .The mainly meaningful side effect of the operation seems to be the reflex sweating of the trunk.

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