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REVIEW ARTICLE

A REVIEW ON THE MALE JUVENILE CHRONIC PELVIC PAIN SYNDROME

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ABSTRACT

There are many studies dealing with CPPS (chronic pelvic pain syndrome) which is very common urologic disorder but the reports about juvenile CPPS is rare. Urology outpatient visits of juvenile CPPS patients is very low but community survey study has suggested that the incidence of juvenile CPPS could be higher than we thought. There might be a possibility of underestimation for the prevalence of juvenile CPPS. According to the studies of juvenile CPPS, juvenile CPPS is devastating and has severe impact on the quality of life as like in adult patients. Compared with adult patients, juvenile CPPS patients had a high voiding symptoms and effect on depression or anxiety is commonly followed. Juvenile CPPS patients could experience more psychologic stress and catastrophizing due to the specificity of that age period with vulnerability. Multimodal management with psychologic reassurance is important to juvenile CPPS patients.

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INTRODUCTION

Chronic pelvic pain syndrome (CPPS) in male is the same name with chronic prostatitis (CP) and it is the chronic inflammation of the prostate with typical chronic pelvic pain of various areas. Pain duration should be at least three months with its typical chronic recurrent nature. The various pelvic pain locations have no lesions in itself and gate control theory can explain the referred pain nature of CPPS (Melzack and Wall, 1965). CPPS is a very common urologic disease and about 8-14% of urology clinics visits are due to CPPS (Collins *et al.*, 1998). The suffering of CP/CPPS patients is severe and known to be similar to recent myocardial infarction, unstable angina or active Crohn's disease which is a severe chronic form of bowel inflammation (Litwinc *et al.*, 1999). Many studies dealt with CPPS in adult patients but the reports of juvenile CPPS is rare. Even though some thought CPPS is not occurring in juvenile age group, one community study showed 13.3% prevalence of CP-like symptoms in juvenile male (Tripp *et al.*, 2012). Although those of previous studies is lower than this, the prevalence rate was 2.0 - 8.3% which is much higher than previously thought (Ferris *et al.*, 2010). Community prevalence rate could be different from real hospital visiting patients and CP-like symptoms could include many other possible disorders other than CPPS itself. But, we should think about the possible underestimation of CPPS and its meaning during juvenile age period.

Juvenile Chronic Pelvic Pain Syndrome (CPPS)

Prostatic growth is delayed until puberty and the surge of male androgen in this age provokes rapid growth of genital organs (De Klerk and Lombard, 1986). During this period, the reproductive function of the prostate becomes active and secretions of prostate composes the main portion of semen in volume. Complications or sequale could be remnant after inflammatory effect on the juvenile prostate when the growth and development of function is active. Juvenile age period is well known as a period for mental, social and emotional development and maturation (Jones *et al.*, 2014). Chronic pain can leave harmful sequale on these maturation process. Juvenile period is rapidly changing and maturing in physical and mental status and the age is psychologically vulnerable period. Psychological stress of chronic bothersome nature of CPPS could be much higher than adult patients. Clinical characteristics of juvenile CPPS patients could be analyzed by comparing with adult patients because juvenile CPPS could be seen as special subgroup of general CP/CPPS. Compared with adult CPPS patients, specific characteristics of juvenile CPPS patients was evaluated in some studies. One report about CPPS during puberty showed predominant pelvic floor disorder and biofeedback was effective for the control of symptoms (Li *et al.*, 2006). In this study the majority of pubertal CPPS was non-inflammatory subtype (III-B) and voiding disorder was dominant symptoms, which is different from adult patients in whom pain is predominant symptoms. In adult CPPS patients, category III-A (Inflammatory chronic pelvic pain syndrome) and III-B (Non-inflammatory chronic pelvic pain syndrome) has same proportion and in another juvenile CPPS study, the

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distribution was similar with adult patients. Due to the rarity of juvenile CPPS studies, conclusion of subtype specificity in each age group is not easy. In recent juvenile CPPS study, total NIH-CPSI (national institute of health-chronic prostatitis symptoms index) scores in juvenile group were high (22.2) indicating that CPPS is devastating in juvenile patients as like in adult patients and the each domains scores were evenly distributed (Lee and Cho, 2017). When compared with young adult patients, relatively high voiding symptoms domains score was noticed. Other study dealing with juvenile CPPS patients also reported the dominant voiding symptoms But, in the community survey of CP-like symptoms during adolescence, the tendency of prominent voiding symptoms was not found.

Pain severity itself seems similar but due to the specific vulnerability of juvenile period, the psychological impact could be higher in juvenile CPPS patients. And it could be the reason why treatment with many tools involving psychological assess is more important in juvenile CPPS patients. As like the adult type CPPS, the exact causes are still unknown. The hypothesis is the reflux of urine. Adolescents can hold urine for various reasons such as school classes or doing interesting activities. Microorganisms can evoke chronic prostatitis although we do not know which microorganisms have clinical relevance. This situation is the same with adult type CPPS but in juvenile CPPS patients, before diagnosing as CPPS, thorough evaluations excluding sexually transmitted infections (STI), urologic anomaly and urinary tract infection have to be made using radiologic and laboratory tests. Treatment strategy for juvenile CPPS is not much different from adult patients. But, some forms of treatment should not be used in adolescents, for example, finasteride, quinolone antibiotics and surgical treatments. If pelvic floor muscle dysfunction is present, physical therapy for pelvic floor could be a good strategy. Reassurance of the subjects is an important part of management because psychological symptoms usually accompany CP/CPPS symptoms and psychiatry consultation could be necessary to accomplish this management. Reassuring that CPPS is a benign disease and no detrimental results follow would help patients not suffering from catastrophizing which is more common in juvenile age group. In irritative bladder symptoms, anti-cholinergic drugs are used to alleviate frequency, urgency, nocturia and urgency incontinence symptoms. Many kinds of food are known to aggravate CPPS symptoms and most patients can know those provoking food by experience. Individual variations in the aggravating food list exist and avoidance of specific food could be made upon patient's experience. Studying juvenile CPPS is difficult due to the small number of patients visiting hospital which is very different from adult cases because adult CPPS is the leading cause of urology outpatient department visits. There might be a possibility of underestimation for the prevalence of juvenile CPPS and it is not so rare as like we have previously thought. Even though juvenile urology department visits due to CPPS is very low compared with adult population, it could be a result of ignorance of symptoms

CP (chronic prostatitis)-like symptoms in community

Differences in the prevalence rate of community surveyjuvenile CP-like symptoms and juvenile CPPS patients in urology out-patients department can be seen as perplexing. One Canadian survey reported 8.3% prevalence of mild CP-like symptoms in men aged 16-19 years. In this study, moderate to severe CP-like symptoms were 3% (Tripp *et al.*,

2008). Another community survey study reported the prevalence rate of 13.3% of mild CP-like symptoms and the rate of moderate to severe CP-like symptoms was 5.4% and in these prevalence study, the used assessment tool was NIH-CPSI. If NIH-CPSI total pain score is more than 4 and he has perineal or ejaculatory pain or discomfort, mild CP-like symptoms was regarded. Moderate to severe CP-like symptoms was defined as NIH-CPSI total pain scores more than 8 and the presence of perineal or ejaculatory pain or discomfort. In these community survey epidemiologic study, there are two requirements to assume CP-like symptoms. One is the presence of perineal or ejaculatory pain or discomfort and the other is NIH-CPSI pain domain scores of more than 4 with possible range of pain scores of 0-21. CP-like symptoms can include other possible diseases as well as CPPS. It is sexually transmitted diseases and urinary tract infection or other mimicking abnormalities in the absence of CPPS. In fact, after removal of question item related with such possibility, the prevalence of CP-like symptoms decreased from 13.3% to 9% for mild CP-like symptoms and from 5.4% to 2.4% for moderate to severe CP-like symptoms. Therefore, the prevalence rate of CP-like symptoms could be higher than CPPS prevalence rate. But, the difference is so much that we have to think about the underestimation of juvenile CPPS prevalence. Patients of CPPS often complain of urinary symptoms. In the study of CP-like symptoms, voiding symptoms were also noted. Of the subjects, 4.2% had difficulty to empty their bladder fully during urination in more than half of times and 0.8% felt this feeling at all times. On the other hand, 15.5% of subjects had to urinate within 2 hours less than half the time over the last week before questionnaire and 8.8% of subjects had to urinate within 2 hours from about half the time to almost always.

It is well known that CPPS has severe impact on quality of life. In the study of CP-like symptoms, 9.8% of subjects reported only a little difficulty to do daily activities by symptoms or thought about the symptoms and 6.4% of subjects reported some interference in those activities or thought about the symptoms and 1.5% of subjects reported a lot of that during the last week before questionnaire. CP-like symptoms are related with depression and decreased quality of life. It can be result in catastrophizing which is faulty thinking pattern where the worst case scenario existing only in imagination. In CPPS or CP-like symptoms, catastrophizing can aggravate the quality of life and devastate the patient's psychological distress (Tripp DA, Nickel JC, Wang Y, 2006). Adequate counseling can attenuate this vicious cycle with reassurance of the patients. In CP-like symptoms survey, pain was associated with urinary symptoms, decreased quality of life, depressive mood and more catastrophizing. CP-like symptoms after excluding STI cases is comparable with CPPS in clinical characteristics in many parameters. When considering the very low number of visits to urology department by juvenile CPPS patients, CP-like symptoms after adjusting possible bias factors can be used as studying model of juvenile CPPS.

Conclusion

Juvenile CPPS is devastating and has severe impact on quality of life as like in adult patients. Compared with adult patients, juvenile CPPS patients had a high voiding symptoms and effect on depression or anxiety is commonly followed. Juvenile CPPS patients could experience more psychologic stress and catastrophizing. There might be a possibility of

underestimation for the prevalence of juvenile CPPS and it is not so rare as like we have previously thought. More studies including the psychodynamic assessment would clarify this disorder.

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Nothing to declare.

Conflict of interest

No conflict of interest.

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