

## Short Communication

# Maternal vegetarian diet in pregnancy, a predisposition to hypospadias?

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### ABSTRACT

**Background:** Hypospadias constitutes one of the commonest surgically treated patient subset in a pediatric surgery set up. The causative factors have always been multifactorial. Maternal age and diet during pregnancy have been attempted to be correlated with the prevalence of hypospadias.

**Methods:** The current study aims to find a correlation between the rises of hypospadias with increased maternal vegetarian diet taken during pregnancy. The mothers of patients presenting with hypospadias were allotted structured self-completed questionnaires. Obstetric history, dietary patterns and lifestyle information during pregnancy was obtained.

**Results:** The mothers of patients presenting with hypospadias who had been on a vegetarian diet had an increased incidence of babies presenting with hypospadias as shown in the chart.

**Conclusions:** Diet during gestation may play a role in the etiology of hypospadias. Although this study is limited by less number of cases, it does show the trend of increased incidence of hypospadias amongst vegetarian mothers.

**Keywords:** Gestational vegetarian diet, Hypospadias

### INTRODUCTION

Hypospadias is a common presentation at the pediatric surgery outpatient department. The prevalence varies worldwide and different rising trends have been seen in different population groups.<sup>3,4</sup> Both genetic and environmental factors are believed to be responsible.<sup>3,5</sup> There has been a recent interest in understanding its relation to the maternal gestational factors. Studies linking an increased maternal age at conception have shown increasing trends in hypospadias.<sup>5,6</sup> Controversies exist regarding prevalence, risk factors and ethnicity. Dietary agents and its association with hypospadias have long been implicated.<sup>5,7,8</sup> Maternal exposure in gestation to various dietary supplements including phytoestrogens

may be a responsible factor.<sup>8,9</sup> The management involves surgery with various options.

### METHODS

Fifty consecutive patients presenting to the pediatric surgery department with a diagnosis of hypospadias were taken into the study during an interval of one year. The mothers of these patients were allotted self-structured questionnaires. Obstetric history and dietary patterns with specifically asked vegetarian diet information was obtained. The prevalence of hypospadias in mothers having taken a vegetarian diet during her pregnancy was calculated. An attempt was made to note a correlation between the two factors. There were no significant

differences between the demography, ethnicity, addictions or contraceptive usage.

## RESULTS

Out of fifty mothers examined, only seven reported intake of a non-vegetarian diet taken in gestational period. The remaining had a vegetarian diet lifestyle. Interestingly, five patients were of Muslim religion out of fifty and all five had a non-vegetarian diet.

**Table 1: Diets of the mothers.**

n=50	Non vegetarian	Vegetarian
Gestational diet	7	43

## DISCUSSION

The etiological factors of hypospadias have always been a center of controversy. Both genetic and environmental causes have been implicated.<sup>2,3,6</sup> Studies have proven increased maternal age to be responsible for increased prevalence.<sup>10,11</sup> A particular factor responsible has been shown to be intake of phytoestrogens and its deleterious effect on the development of male genital system.<sup>4,5,8,9,12</sup> We have attempted to supplement this hypothesis by correlating an increased maternal gestational vegetarian diet with increased prevalence of hypospadias in male babies. Similar studies done back in 2000 have shown that phytoestrogen intake does cause ill effects on the development of male genital system which may cause hypospadias.<sup>1,10</sup> However the less number of cases in this study serves as a limitation in proving the correlation. A similar larger study over an extended duration may be further done for supporting present study.

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