Vasectomy in Langur Monkeys (*Presbytis entellus entellus* Dufresne)

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Vasectomy In Langur Monkeys (*Presbytis entellus entellus* Dufresne)

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The sex accessory gland functions were studied in 1–12 months vasectomized langur monkeys. Seminal plasma fructose did not change. Semen volume, magnesium, and citric acid decreased transitionally up to 6 months. A significant decrease in LDH and transaminases (GOT, GPT) following vasectomy indicated an altered secretory activity of the accessory sex organs.

**Key Words:** Vasectomy; Langur monkey; Sex accessory organs.

**INTRODUCTION**

Accessory sex organ functions following vasectomy have revealed contradictory and inconclusive results [13]. Seminal vesicle activity is altered after vasectomy [5, 8]. Contrary cross-sectional studies suggested no change [13, 16]. Prostatic activity is enhanced after vasectomy, whereas suppressed activity also has been suggested [8, 16, 14, 13]. The present investigation was undertaken to determine accessory sex organ functions following vasectomy in langur monkeys.

**MATERIALS AND METHODS**

Twelve adult langurs were quarantined for 2 months and divided equally into two groups for bilateral vasectomy and sham operations. Animals were housed individually in metallic cages and fed on wheat chapatties, vegetables, and soaked grams. Water was provided ad libitum. Vasectomy involved removal of a 0.5-1 cm piece of vas and double ligations. Sham operation exteriorized the vas without cutting or ligations.

Post-surgical semen samples were collected for 12 months [12]. Seminal fluid volume was measured and seminal fructose, citric acid, magnesium, LDH, and transaminases were estimated [11, 9, 15, 3, 18]. Student's t test was applied for statistical analysis.

**RESULTS AND DISCUSSION**

Seminal fluid volume decreased significantly following 3, 4, and 5 months of vasectomy. Seminal fructose did not show any change. Citric acid was lowered significantly at 3–9 months; magnesium also showed a similar pattern. Transaminases and LDH decreased gradually for 12 months of vasectomy as compared with sham operated controls (Fig. 1).

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Seminal fluid is mainly contributed by the seminal vesicle and prostate [7]. Semen volume is unchanged after vasectomy in dogs [2]. However, a significant decrease in semen volume was noticed in vasectomized langur monkeys [4, 13]. Decreased volume indicates altered seminal vesicle and/or prostatic functions after vasectomy.

Each of the accessory sex organs have their own characteristic secretions. Functional changes occurring in these organs can be assessed by the estimation of particular parameters. Fructose is mainly contributed by the seminal vesicle gland [10]. Fructose concentration is elevated in the semen of vasectomized bulls, rams, and men [11, 8, 5]. No significant shift in seminal fructose was observed in the present study [4, 13].
Citric acid, LDH, magnesium, and transaminases are secreted by the prostate and their estimations for evaluation of prostatic function is well recognized [6]. Acid phosphatase is increased significantly in the semen of vasectomized men [8, 16], whereas citric acid, maltase, prolactin, zinc, and magnesium constituents are decreased after vasectomy in men [7, 13]. Lowered LDH, magnesium, citric acid, and transaminases levels in vasectomized langurs suggest suppressed prostatic activity after vasectomy [1].

There is direct testicular control over the function of accessory reproductive organs via the vas deferens in adult animals [17]. Vasectomy results in removal of such a control. Suppressed prostatic function after vasectomy might be due to the removal of direct testicular control. Unaltered seminal vesicle activity might be the consequence of a different response of different glands to vasectomy.

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