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TABLE OF CONTENTS

EDITORIAL
Muralidhar N
A New Era of Publication

Page No.
2

REVIEW ARTICLES:

JANMARALA PRAVIRTTA VYADHI - A CONCEPTUAL UNDERSTANDING
Kulkarni Reena, U Shailaja, M Vijayalakshmi, Kumar Nayan, Das Ambika
3-8

NIDRA AND BODY CONSTITUENTS: AN OVERVIEW
Chaturvedi Ashutosh, Pujar Muralidhar P, Ashvini Kumar Praveen RS
9-11

A CLOSER LOOK AT MALE INFERTILITY IN 21ST CENTURY
Kamath Nagaraj, Kulkarni Pratibha, Chiplunkar Shivprasad
12-16

CASE REPORT

BILATERAL VARIATIONS OF RENAL ARTERIES AND VEINS – A CASE STUDY
Kanhi Giridhar M, Aruna, Harshita, Anoop, Visakh, Vidhu
17-19

AN ANATOMICAL VARIATION IN THE BRANCHING PATTERN OF PROFUNDA FEMORIS ARTERY- A CASE REPORT
Bhuradwaj Vinay Shankar B, Bedekar Swati Sanjay, Kulkarni Bhagyavan Gyanadhar
20-21

HIGH DIVISION OF BRACHIAL ARTERY WITH ITS EMBRYOLOGICAL AND CLINICAL SIGNIFICANCE – A CASE REPORT
Dixit Santosh, Mankar Atul
22-25

AGENESIS OF Isthmus of THYROID GLAND- A CASE REPORT
Santhe R, Omprakash KV
26-29

A RARE VARIATION IN BRANCHING PATTERN OF AXILLARY ARTERY - A CASE REPORT
Unna B Gopal, U Govindaraju, Kulkarni B G, Hegde Shruti Gopinath, Kavita Anjali, Ajith M Alex
30-33

WORKSHOP PROCEEDINGS OF “AKRUTI 2013”
34-37

RANK HOLDERS
RGUHS Karnataka, Examination Rank Holders List 2010-11, 2011-12 Batch
38-39

WITH BEST COMPLIMENTS FROM MAKERS OF

TRIGODIAB TABLET, POWDER & GRANULES
FOR DIABETES AND ASSOCIATED COMPLICATIONS
AYUFLAM OIL & OINTMENT
KILLER FOR MUSCULAR AND ARTHRITIC PAIN

NUTONE – AD GRANULES
ANTI- DEPRESSANT
FEMISAR COMBIPAC OF SYRUP AND TABLET
RESTORES FEMININE BODY BALANCE

TERMILEX POWDER & TABLET
A SUGARFREE CONSTIPATION FORMULA
HEMIDEX CAPSULE AND SYRUP
BLOOD PURIFIER

PYROL POWDER AND TOOTHPASTE
FIGHTS GERMS & BAD BREATH
OCICOF - ASTHMA SYRUP
CLEARS CONGESTION , RELIEVES DYSPNEA

STRENGTHEN TEETH
MILOVIT CAPSULE, GRANULES AND SYRUP
GRANULES
MIGREX
ANTI MIGRANE
ANTI OXIDANT & REJUVENATOR

TABLE OF CONTENTS

EDITORIAL
Muralidhar N
A New Era of Publication

REVIEW ARTICLES:

JANMARALA PRAVIRTTA VYADHI - A CONCEPTUAL UNDERSTANDING
Kulkarni Reena, U Shailaja, M Vijayalakshmi, Kumar Nayan, Das Ambika
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20-21

HIGH DIVISION OF BRACHIAL ARTERY WITH ITS EMBRYOLOGICAL AND CLINICAL SIGNIFICANCE – A CASE REPORT
Dixit Santosh, Mankar Atul
22-25

AGENESIS OF Isthmus of THYROID GLAND- A CASE REPORT
Santhe R, Omprakash KV
26-29

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30-33

WORKSHOP PROCEEDINGS OF “AKRUTI 2013”
34-37

RANK HOLDERS
RGUHS Karnataka, Examination Rank Holders List 2010-11, 2011-12 Batch
38-39

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A CLOSER LOOK AT MALE INFERTILITY IN 21ST CENTURY

KAMATH NAGARAJA, KULKARNI PRATIBHA, CHILUNKAR SHIVPRASAD

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ABSTRACT

Infertility is defined as the failure to achieve a pregnancy after one year of regular unprotected intercourse with the same partner. Infertility equally affects men & women. About 1/3 of infertility cases are related to male factors, 1/3 is related to female factors and the remaining 1/3 is related to both male & female factors or are unexplained. Unexplained causes of infertility make up about 20% of all cases. Research studies show that 5.2 million decrease in sperm count & 0.5% reduction in sperm motility per year. This can be attributed to lifestyle changes- smoking, substance abuse, increasing psychogenic stress & metabolic syndromes, exposure to industrial/mutagenic pollutants and pesticides. The other common causes are Hormonal & Sperm production problems, blockage of sperm transport, erection & ejaculation problems. Genetic abnormalities in 10% of men.

Methods of increasing sperm quality and count - Decreasing the frequency of sexual activity, should quit smoking, alcohol & drugs consumption, need to undergo yoga, exercises & have nutritious diet daily, avoid stressful work & junk food, should take rest in between long hours of work, sleep at least for 6- 8 hours, avoid wearing tight undergarments & clothing and avoid direct exposure to heat & radiation.

Ayurveda has mentioned the various causes for male infertility. It has mentioned diet & regimens that are beneficial in promoting quality, quantity, motility of sperm. It has also mentioned the diet & regimens to be followed before conception to increase the properties of sperm (Shukra) and thus for healthy progeny.

Keywords- Male infertility, lifestyle, Ayurvedic view and treatment

Introduction

Infertility is defined as the failure to achieve a pregnancy after one year of regular unprotected intercourse with the same partner. Infertility equally affects men & women. Living a healthy lifestyle is important for fertility. Today’s lifestyle factors can affect a man’s fertility and many of these can be controlled. Leading a healthy lifestyle improves not only the chances of conceiving but also improves overall health.

Within the framework of WHO’s definition of health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, reproductive health addresses the reproductive processes, functions and system at all stages of life. Reproductive health, therefore implies that people are able to have a responsible satisfying and safe sex life and that they have the

REFERENCES:

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According to Gregory and Guse, Sommering’s Levator glandulae thyroidea is an accessory muscle which runs from the hyoid bone to insert partly on the thyroid cartilage & partly on isthmus of thyroid gland. The frequency of presence of pyramidal lobe could be a source of pitfall in thyroidectomy during preoperative diagnosis on scintigraphical images. Residual thyroid tissue in the pyramidal lobe can lead to serious complications in diseases like cancer and Graves’ disease, where complete removal of the thyroid gland is indicated (Wahl et al. 19). During thyroidectomy, the pyramidal lobe—also called Lvalouette’s lobe—should be looked for and removed as failure in its identification can result in incomplete resection of the thyroid gland (Geraci et al. 13). All thyroid diseases are described in the pyramidal lobe, which is formed from normal thyroid tissue (Ignjatovic). 10

### Table showing prevalence of presence of pyramidal lobe, levator glandulae thyroidea (LGV) and absence of isthmus in literature

<table>
<thead>
<tr>
<th>Author</th>
<th>Nature of specimen</th>
<th>Pyramidal lobe %</th>
<th>LGV %</th>
<th>Absence of isthmus %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranade et al. 1</td>
<td>Adult cadaver Male-58 Female-0</td>
<td>Male-58 Female-0</td>
<td>Male-56.8 Female-1.8</td>
<td>Male-39.0 Female-47.1</td>
</tr>
<tr>
<td>Cicciocibasi et al.</td>
<td>Aborted foetuses-60</td>
<td>18.3</td>
<td>-</td>
<td>6.9</td>
</tr>
<tr>
<td>Braun et al. 10</td>
<td>Adult cadaver 58</td>
<td>55</td>
<td>-</td>
<td>6.9</td>
</tr>
<tr>
<td>Stermiolo et al. 11</td>
<td>Operated patients</td>
<td>25.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sultana et al. 12</td>
<td>Adult cadaver</td>
<td>Male -52.1 Female-41.7</td>
<td>43.3</td>
<td>-</td>
</tr>
<tr>
<td>Geraci et al. 17</td>
<td>Operated patients</td>
<td>12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Joshi et al. 14</td>
<td>Adult cadaver</td>
<td>37.8</td>
<td>30</td>
<td>16.7</td>
</tr>
<tr>
<td>Prakash et al. 15</td>
<td>Adult cadaverMale-43.9 Female-22.3</td>
<td>Male-43.9 Female-22.3</td>
<td>Male-34.6 Female-27.8</td>
<td>Male-9.6 Female-5.6</td>
</tr>
</tbody>
</table>

**CONCLUSION**

Agenesia of isthmus incidence varies from 5%–33%. This agenesia can be explained as an anomaly of embryological development (congenital anomaly) i.e. a high division of the thyroglossal duct giving rise to two independent thyroid lobes with absence of isthmus. It can be associated with other types of dysorganogenesis, as the absence of a lobe or the presence of ectopic thyroid tissue. Persistence of distal part of thyroglossal duct explains the presence of pyramidal lobe. Chromosome 22 could play a role. Genetically the developmental agenesia is due to the result from mutations in one of three thyroid developmental genes (TITF1, PXA8, FOXE1/TITF2), especially TITF2, because these genes are more essential for the normal development of palate and thyroid. Hence in clinical practice when such a condition is diagnosed, it is necessary to perform a differential diagnosis against other pathologies such as autonomous capability to reproduce and the freedom to decide it when and how often to do so. Implicit in this are the right of men and women to be informed of and to have access to safe, effective, affordable and acceptable methods of fertility regulation of their choice, and the right of access to appropriate health care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant. 1

**Incidence and prevalence**

About 1/3 of infertility cases are related to male, 1/3 is related to female factors and the remaining 1/3 is related to both male & female factors or are unexplained. Unexplained causes of infertility make up about 20% of all cases. In India approximately 15 – 20% couples are infertile of which 50% is due to infertility in men. This leads us to the conclusion that almost 7.5 to 10% men in the reproductive age are incapable of contributing to conception. About 25% of couples do not achieve pregnancy within 1 year, 15% of whom seek medical treatment for infertility and less than 5% remain unwillingly childless. Infertility affects both men and women. Male causes for infertility are found in 50% of involuntarily childless couples. If there is a single factor, the fertility partner may compensate for the less fertile partner. In many couples, however a male and a female factor coincide. Infertility usually manifest if both partners are sub fertile or have reduced fertility. In western countries, 10% to 15% of couples will not be able to achieve pregnancy after one year of unprotected intercourse. 30% to 40% of couples will discover fertility problems in both partners. About 20% of couples will discover fertility problems in only the man. About 30% to 40% will discover fertility problems in only the woman. About 10% of men will not find a reason for their infertility. Reduced male fertility can be the result of congenital and acquired urogenital abnormalities, infections of the genital tract, increased scrotal temperature (varicocele), endocrine disturbances, genetic abnormalities and immunological factors. In some cases no causative factors are found. These men present with no previous history associated with fertility problems and have normal findings on physical examination and endocrine laboratory testing. Semen analysis reveals a decreased number of spermatozoa (oligozoospermia), decreased motility (asthenozoospermia) and many abnormal forms on morphological examination (teratozoospermia). These abnormalities usually occur together and are described as the oligoasthenoteratozoospermia (OAT) syndrome. (WHO)

**Life style**

Research studies show that 5.2 million decrease in sperm count & 0.5% reduction in sperm motility per year. This can be attributed to life style changes- smoking, substance abuse, increasing psychogenic stress & metabolic syndromes, exposure to industrial/mutagenic pollutants and pesticides. The other common problems are Hormonal & Sperm production problems, blockage of sperm transport, erection & ejaculation problems. Genetic abnormalities are seen in 10% of the cases. A study says many health problems are related to lifestyle and dietary factors. Increasing trend in reproductive disorders observed in recent years may be associated at least in part with these factors, which are compounded by some of the new emerging life styles. The data available suggests that lifestyle factors such as obesity, tobacco smoking or chewing, alcohol and some of the illicit drugs like cocaine, cannabis etc and exposure to extreme heat, have adverse effects on male reproduction. The data on other factors such as use of mobile phone and stress on reproductive health are inadequate and need detailed study. 3

There have been 6 studies done since 1973 which unambiguously show decrease in average sperm count. It has been estimated that 5.2 million decrease in sperm count each year and the motility has been reduced by 0.5% per year. This can be attributed to life style changes.

**Occupation**

Even the occupation will be having its effect on fertility. Work affects women’s and men’s bodies and minds in many ways. Workers can gain great satisfaction from their jobs but they...
Alcohol abuse apparently.

...normal in position but no isthmus.

...monkey (Macacus rhesus), the thyroid glands.

...humans, the incidence varying from 5% to 5.

...isthmus of the thyroid gland or isthmus.

...exposure to hazards that can affect...

...to hazards that can affect their health. Toxic chemicals may lead to cancer, reproductive problems and even to death. Repetitive movements and heavy loads can damage bones, joints, muscles and nerves. Working in overly hot or cold temperatures can affect the cardiovascular and reproductive systems, causing pain and illness. Working under pressure with little power to change the work environment can cause psychological and physical distress. All over the world, women and men suffer discomfort, disease, injuries and death from their work. In general, the problems associated with men’s work are better known, since men do visibly heavy and dangerous work such as mining, cutting trees, fishing and building. More recently, a number of risks have been identified in women’s work and this article presents some of these.3

Smoking and alcohol

Smoking tobacco decreases sperm size and movement and can also damage the genetic makeup of sperm cells. It may also have a negative effect on seminal fluid. A male with an alcohol problem is more likely to have abnormal shaped sperm. Alcoholism can also affect hormones, causing higher estrogen levels and less sperm. Excessive alcohol can decrease sperm production. Excessive consumption of alcohol can make it difficult for men to achieve and maintain an erection. Without an erection, ejaculation does not typically occur, which means conception is impossible. Alcohol may also lower testosterone levels so even if there are no erection problems, sperm count may be too low to cause pregnancies. Alcohol consumption may also degrade the health of sperm, increasing the risk of miscarriage. A study showed that only 12% of alcoholics and six per cent smokers showed normozoospermia compared to 37% nonalcoholic nonsmoker males. Teratozoospermia, followed by oligozoospermia dominated alcoholics. Overall impact of asthenozoospermia and teratozoospermia, but not of oligozoospermia, was observed in smokers. Light smokers predominantly showed asthenozoospermia. Heavy alcoholics and smokers showed asthenozoospermia, teratozoospermia as well as oligozoospermia. Alcohol abuse apparently targets sperm morphology and sperm production.4

Obesity

Being overweight or obese may be associated with male infertility. A study says that the sperm concentration was negatively influenced by body mass index and alcohol consumption and was positively influenced by cereal consumption and the number of meals per day. The sperm motility was also negatively influenced by BMI, alcohol consumption and smoking habit, whereas it was positively influenced by the consumption of fruits and cereals. The consumption of alcohol had a negative influence on the fertilization rate. The consumption of red meat as well as being on a weight loss diet had a negative impact on the implantation rate. In addition, the consumption of red meat and being on a weight loss diet had an effect on the pregnancy chance.5

Exercise

Exercise is good. Excessive exercise that heats up the scrotum area can lower the quantity and quality of sperm. Research has also shown that the age-old boxer versus briefs theory also plays a role in male infertility. These studies reported that boxers increase the quality and quantity of the sperm as compared to briefs because of the heat issue. Similarly avoid Jacuzzis and saunas which increase the body temperature. A high level of stress has shown to affect male infertility. Ejaculating too frequently or too infrequently could cause low sperm quality. Infrequent ejaculation leads to old, low-motility sperm. There is no magic number for men trying to have children, but digressing from your normal sexual activity by increasing or decreasing it drastically can have an adverse affect on male fertility.

Diet

If a man is not eating a proper well balanced diet of fruits and vegetables, his sperm count can become very low and the sperm motility affected as well. Some simple changes in the man’s eating habits can increase his fertility and make him healthy overall. Fruits and...
Case Report

AGENESIS OF ISTHMUS OF THYROID GLAND—A CASE REPORT

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ABSTRACT

Background: Morphological and developmental anomalies of thyroid gland have been reported in literature such as hypoplasia, ectopic thyroid, hemiagenesis or agenesis of gland. Agenesis of thyroid isthmus is a rare congenital anomaly and few cases were reported earlier.

Case presentation: A 50-year-female cadaver thyroid gland had two separate lobes (Right & Left). The length of the lobes was 5.8 cm at the right and 5.2 cm at the left lobe; width were 3.2 cm and 3.8 cm, respectively. Left lateral lobe had a pyramidal lobe which is connected with levator glandulae thyroideae. The individual lobes were supplied by branches of superior and inferior thyroid arteries. No anastomosis between thyroid arteries of right & left lobe of thyroid gland in the median plane.

Discussion: Agenesis of isthmus does not cause clinical symptoms by itself and diagnosis is secondary due to the existence of other thyroid pathology. This may be due to mutation of genes associated with thyroid gland.

KEYWORDS: Thyroid agenesis, agenesis of isthmus, pyramidal lobe, thyroglossal duct

INTRODUCTION

Thyroid gland is the first endocrine gland to start developing in the embryo. It is well known for its developmental anomalies ranging from common to rare 1. Common anomalies - persistence of pyramidal lobe and thyroglossal cyst. Rare anomalies - agenesis or hemi-agenesis of thyroid gland, agenesis of isthmus alone or aberrant thyroid gland 2. The thyroid gland, brownish-red and highly vascular endocrine gland, is placed anteriorly in the neck, extending from the fifth cervical to the first thoracic vertebrae. It is enshrouded by the pre-tracheal layer of deep cervical fascia.

The gland is composed of two lateral lobes connected by an arrow median isthmus. The normal size of each lobe of the thyroid gland has been described to be 5 cm long, its greatest transverse and anteroposterior extent being 3 cm and 2 cm respectively. The isthmus measures about 1.25 cm transversely as well as vertically and is usually placed anterior to the second and third tracheal cartilages 3.
the ejaculation of Shukra; Ustira, Kushta etc drugs will help in the purification of Shukra; Vritya Dravyas like Nagabala, Kaspikshu,Sukra Vridhikara means which increases the quantity of Shukra is Masha, Sukra Srankthira is Sankalpa one of the Maraka Bhuva,Sukra Vridhi Srankthira is considered as Ksheera; among all the Dravyas which is responsible for Shukra Janana the semen of crocodile is considered as the best and Ksheera is considered as Sudhva Shukra Janaka. Ayurveda has also mentioned the diet & regimens to be followed before conception to increase the properties of Shukra & thus for healthy progeny. It is told that the eligible wife and husband fulfilling the righteous conditions should undertake sexual abstinence for a month from the first day of the menstrual cycle. On the particular day husband should anoint his body with ghee and should have meals containing ghee, rice, milk and butter. The wife should anoint her body with oil should consume the food consisting of oil and black gram. After uttering Veda mantras as prescribed and having full confidence themselves that they will certainly get a child should perform the sexual intercourse.3

CONCLUSION

During the ancient times, requirements of a person were minimum. In today’s hectic and materialistic culture, rarely any person gets the time to think of his own health. Hence many people think that this lifestyle is not possible to follow but this is wrong concept. Every one of us should at least understand the importance of ideal lifestyle and must try our level best to follow as much as possible. Smoking, alcohol, intake of unhealthy food, exposure to radiation, occupational stress etc should be avoided and a healthy life style should be followed for a healthy progeny.

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Campta highlighted diagnostic, interventional and surgical significance of such variation diagnostically which may disturb the evaluation of angiographic images.

Further knowledge of such variation has got clinical importance especially in the field of orthopaedic, plastic and vascular surgeries.9

Hence, this knowledge of vascular variation, important for clinicians in day today practice for measurement of blood pressure using sphygmomanometer cuff in the arm.

CONCLUSION:

The short segment brachial artery and its variant termination in the form of high division as noted in the present study are fairly common. The case can be explained in the light of embryological development. In addition, knowledge of such variation is important for carrying out surgical procedure in the arm.

REFERENCES:

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