Asymmetric testicular levels in the crotch: Authors' reply

I welcome Lobo et al.'s interest in my article and would be happy to debate the issue – but I respectfully disagree with several of their comments.

In the paper cited by Lobo et al. [1] and my other companion papers published elsewhere [2–4], I went to some lengths to uncover the secrets of the human testes, understanding the reasons behind their descent into the scrotum and their different levels of swinging. My interest however, is in understanding why the natural processes of evolution, so meticulous and observant when it came to depicting the human body, got it wrong when it came to the male organ. From observations of our body, it was intriguing to me that the nature which has nurtured vital organs like the brain, heart, and the lungs by encasing them in different bony and soft tissue cages has left another important organ, the male gonads hanging down in a thin-walled soft sac exposing it to increased risk of injuries. Why?

Another important unanswered question about the male gonads: why are the mature testicles asymmetrical? Many studies over long periods have approached this problem from different angles and a number of papers on scrotal asymmetry have been published, including one in Nature by McManus [5]. The cause of this asymmetry, however, still remains largely unknown. At a first glance the answer might seem to be clear. One might put forward a simple argument which would say that the heavier of the two gonads is pulled down by the action of gravity. In reality, this mechanical explanation is incorrect because the right testicle is usually the larger, heavier and is also the higher [4,5]. More surprisingly, recent data shows that such asymmetry occurs not only in the anatomy, but also in the surface temperature patterns of the scrotum [2].

In response to their first point [6], I would like to refer them to a study by Nakai and Zamma (cited in the original article), on which my reasoning was based [7]. They have shown for the first time that the asymmetric position of the testes is not a feature unique to humans, but is also seen in animals like chimpanzees. I agree with Lobo et al. that in humans the scrotum is located more anteriorly, but we should remember that this position holds good only for bipeds, and not for quadruped animals wherein testes tend to hang down in between the thighs. In addition, we should also note that relative to the body size, a male chimpanzee’s testes are 10 times larger than a man’s, and together weigh up to 250 g [8], and therefore, even a small difference in the levels of the testicles in these animals would have a beneficial effect in reducing the width of the scrotum. I would also like to point out that the purpose of my article was to highlight all possible mechanisms that could explain scrotal asymmetry.

With respect to Lobo et al.’s second point [6], I would like to highlight a study by Jung et al. which showed a significantly lower scrotal temperature during walking versus sitting [9], and since the discussion was regarding a different mode of heat transfer, namely convection, which is well described in both living as well as non living, primarily dependent on the surface area and temperature gradients, all other constraints become less significant.

References


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A possible method on how to improve the surgical techniques about cleft lip repair

Introduction

Cleft lip occurs in 1/500–1/1000 births worldwide [1]. Cleft lip is among the most common types of major birth defects that impair the development of speech, teeth, and feeding capabilities [2]. For many years, plastic surgeons have been working hard on how to improve the surgical techniques about cleft lip repair and reduce the suffering of patients. Advances in modern surgical techniques have led to improved clinical management of cleft lip, with many patients achieving excellent functional and cosmetic outcomes [3]. However, cleft lip usually requires multiple surgeries, and often results in emotional stress for affected children and their families [4]. Because it is difficult to obtain stable cosmetic outcomes in a single operation, many plastic surgeons have recently become increasingly focused on how to improve the surgical techniques about cleft lip repair.

The hypothesis

The consensus for the etiology of cleft lip is that of complexity, caused by both genetic and environmental factors [5]. The genes
were thought to play the major role. The contribution of genetic factors on facial features is obvious in many families, such as the cleft lip in many families. Familial resemblances for craniofacial structures have been documented in previous studies [6–8]. The results of these studies indicated that development of the lip is of genetic trend and lip of the off-spring will grow according to labial morphology of the parents. Therefore, we hypothesized that the inherited index of lip region from the parents of patients can help the surgeons make accurate treatment plannings and improve the surgical techniques about cleft lip repair.

**Discussion**

The growth of the face is the genetic developing progress. It is very important for children to extract the maximum investment from their parents, regardless of their genetic relationship to the parents [9]. Phenotypic similarity, especially facial resemblance between parents and their children, could be an indicator of genetic relationship. The basic facial appearance of each parent can be reflected in each child with a probability of 50% [10,11]. However, few surgeons could consider the role of inherited family resemblances in evaluating of labial morphology. They focused on using the facial symmetry index that got from the nonrelatives people to help the evaluation of treatment planning and the results of cleft repairs [12]. Their conclusions could be used to evaluate the treatment planning, the results of cleft repairs, craniofacial growth and variables after surgery. However, because they do not consider development of the lip is of genetic trend, they maybe destroy the important index of labial region during the operation and impair labial growth. If the surgeons could consider the role of inherited family resemblances in the evaluation of treatment planning, they would improve the surgical techniques and achieve excellent functional and cosmetic outcomes. Meanwhile, cleft lip would not require multiple surgeries or result in emotional stress for affected children and their families.

**Conflicts of interest statement**

The authors declare that there are no conflicts of interest.

**References**


Hypotheses concerning rickettsial microorganisms, autoimmune diseases and new treatment strategies

The author has in a previous article [3] hypothesized infectious, possibly rickettsial aetiologies for multiple sclerosis, schizophrenia and for many cases of the chronic fatigue syndrome and advocated the use of combinations of antibiotics in their treatment.

The theoretical point of departure was the well known fact that in large cohorts of patients with multiple sclerosis and schizophrenia these symptomatically dissimilar diseases show highly similar courses, with 10% of the patients having but one episode, while 80% have as yet unpredictable shorter or longer periods of exacerbations with varying degrees of functional decline, while 10% from an insidious beginning, often difficult to diagnose run a steady downhill course ending after a varying number of years in total neurological or psychiatric invalidity.

The theoretical starting point for the present paper has been the well known but hitherto unexplained fact that schizophrenia and rheumatoid arthritis are mutually exclusive diseases. The finding with the first results published already in 1936 by Nissen and Spencer [5] that schizophrenia and rheumatoid arthritis are mutually exclusive diseases has led the author to suggest an infectious, possibly rickettsial origin for both schizophrenia and rheumatoid arthritis. A suggestion which could be extended to cover other autoimmune diseases and new treatment strategies

Nissen and Spencer studied records of 2200 State psychiatric hospital patients and were unable to find a single case of concurrent schizophrenia and rheumatoid arthritis. With an estimated
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