LETTER TO THE EDITOR

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Independent organ donor facilities: The future of organ donation?

Dear Sir

Since 2001 independent Organ Donor Facilities(OFOs) have been proposed within Organ Procurement Organizations (OPOs) with the aim of reducing organ procurement costs [1], cold ischemia time of donor organs and the flight-related risk [2] for donor surgeons, perfusionists and coordinators.

An independent OFO has been established in 2001 in St. Louis [3], half away between the 2 Transplant Centers (TCs) (Washington University School of Medicine and St. Louis University) and now includes a two-bed intensive care facility, a complete laboratory, a cardiac catheterization facility, a Computed Tomography (CT) scanner and an operating room.

All brain-dead (BD) patients within OPO (Mid-America Transplant Services), after family's informed consent, are transferred, if necessary by an OPO owned and operated airplane, to this facility, where undergo multiorgan harvesting. By doing so the organ acquisition charges (OACs) apparently decreased, as well as delay in recovery, which can affect organ viability and move families to withdraw consent; also risks and tiring of transplant surgeons were reduced. This independent OFO successfully procured in 2001 not only livers, but also pancreas, kidneys, hearts and lungs [4-6]. Cold ischemia time was reduced and there was no Primary Non Function (PNF) of harvested organs, but only kidney delayed graft function (DGF).

In the past, heart donors were moved to the recipient's hospital. With the development of multiorgan harvesting, usually donor surgeons are sent by the TCs in order to evaluate liver, pancreas, heart and lungs, while the only local surgeons is the "nephrectomist", that in local hospital is not a transplant surgeon. To move a donor, although hemodinamically stable, is always a risk. Finally, the decrease of OAC must balance the extra expenses to create and operate independent OFOs.

In all the papers published by the members of this OFO, the control group of the retrospective analysis consisted of less selected BD donors, requiring more vasosuppressor support, which can be a study bias.

It has been proposed that OPOs should organize "recovery teams" for multiple TCs but most transplant surgeons, in case of marginal donors, would like to inspect the organ prior to starting recipient surgery or would send their own team to harvest organs.

According to literature, there are no other independent OFOs in US, probably because there is no need for them, and increasing their numbers would not increase organ donation rate. Considering Europe, we do not have information about the existence of independent OFOs: this may be a consequence of logistical organization and minor distances, as well as the higher concentration of TCs. However, the acceptance of such a procedure from donors' families may be less enthusiastic in Europe than in USA, particularly from minorities. In Italy would not be acceptable that the maintenance of BD donors and more generally the operation of independent OFO would rely on non-physicians, to save costs. Finally it is not clear from the reviewed papers who pay for transportation of the donor's body from the independent OFO back to home, but donor's family should not be charged for these expenses.

At least 5 donors were lost during transportation, confirming that moving of BD donors remains a risky procedure.

The potential economical and organizative benefits of independent OFOs could be counterweighted by the perceived (by relatives and public opinion) commodification/reification of BD patients.

Anyway, the authors of these papers should be congratulated for their innovative proposal. However, a prospective randomized trial would be needed to draw more definitive conclusions on the real benefits of independent OFOs.

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Thymectomy and systemic lupus erythematosus (SLE)

Dear Sir

The thymus plays a crucial role in the context of cell-mediated immunity in the differentiation of T lymphocytes, not only during the embryogenesis and fetal period but also during the adulthood, even after its involution [1,2,3].

It has been proved, indeed, that thymectomy in adult rat entails a decrease of the T-lymphocite response to mitogens and eventually its abolition [4,5,6].

The removal of the thymus can decrease the activity of T-helper cells but in the same time it might enhance the activity of T-suppressor whose function is depressed in autoimmune diseases [7].

The therapeutic role of thymectomy is proved in Myasthenia Gravis even if the exact mechanism underlying its effect remains largely unknown.

The role of thymectomy as a treatment of autoimmune diseases other than Myasthenia Gravis (i.e. sistemic lupus erythematosus, rheumatoid arthritis, autoimmune hemolytic anemia, multiple sclerosis) has been investigated but the results of these studies are questionable [7].

Our aim is to evaluate the role of thymectomy in order to clarify whether it may be regarded not just as therapeuytic, but, on the contrary, as a factor paving the way to the onset of autoimmune diseases. Therefore, the relevant literature has been taken into account along our study.

Thymus has an important role in regulating immune reaction through its control on T-cell differentiation of both T-helper and T-suppressor/cytotoxic cells. That is the reason why thymectomy produces a shift in autoimmune diseases with disregulation of the immune networks[2]. After thymectomy, indeed, an induction and an acceleration of autoimmune processes has been observed. A relevant work focusing on those mechanisms was written by Gerli et al[1] . In their work, the authors consider the long term immunologic effects of therapeutic thymectomy in patients with Myasthenia Gravis comparing 16 patients with Myasthenia Gravis and previous Thymectomy (at least 8 years before), 6 patients with Myasthenia Gravis and recent Thymectomy (<1year) and 13 with Myasthenia Gravis non Thymectomized and 32 healthy subjects used as control. The study shows that the long term thymectomized patients had mild T-cell lymphopenia and an expansion of $CD4^+$ and $CD8^+$ cells. These serologic abnormalities were not detectable in not and recently thymectomized patients.

Myasthenia Gravis and SLE are autoimmune disorders. They have positivity for antinuclear antibodies (ANA) and thymus hyperplasia.

SLE is characterized by an alteration of the immune system that involves B cells and T lymphocites, resulting in polyclonal B cell activation and autoantybody production.

The thymus deletes self-reactive T-cells with high avidity T-cell receptors for self antigens expressed in the thymus [8,9]. This, hence, means that thymus has a protective role against autoimmunity.

The prevalence of SLE in pts with Myasthenia Gravis has been reported 0,2%-2,7% [10]. Cases in which the SLE has developed after thymectomy for Myasthenia Gravis have been reported in the literature, but there are also cases in which SLE developed before thymectomy in pts with both SLE and MG.

Iwadate at al reported from a review of the literature in a period of 40 years (1963- 2004) 21 patients in whom LES developed after thymectomy. Their ages ranged from 11 to 66 years (mean 40.4 years) with SLE developing from 2 months to 13 years (mean 4.9 years) after thymectomy. Polyarthritis was the most common manifestation of SLE [11].

The proof that thymectomy can facilitate the development of SLE can be traced in the cases reported by the literature. The prevalence of SLE among patients with thymoma varies between 1,5 and 10% [12]. Boonen et al identified in a period of 20 years (1975-1998) 18 new cases of thymoma and SLE. In 39% of the patients SLE was diagnosed before detection of thymoma. In 33% of the patients, thymoma and SLE was found simultaneously and in 28% SLE was discovered after thymoma. In five cases thymectomy had no clear effect on SLE. In two cases an exacerbation was reported and in one case SLE was attenuated [11,13].

However, Vaiopoulos et al [14] described in a series of 28 patients with both LES and Myasthenia Gravis, 17 cases in which LES developed before thymectomy.

CONCLUSIONS:Thymectomy may thus be a precipitating factor for the development of SLE due to the loss of central tolerance and the overproduction of antibodies. Therefore, after a thymectomy, it is important to perform a timely follow up of the patient.

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