

George Thomas Beatson (1848-1933): History of His Laboratory Based Surgical Practice in Glasgow City As Well As Recent Researches There

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Abstract: *By 1896, George Thomas Beatson, a sagacious surgeon of Glasgow, was following the ethical practice of informed consent when operating on patients. Preparatory to this, he meditated on the old practice used on cows by farmers to ensure continuing copious secretion of milk. Thereafter, on obtaining the licence for removing the ovaries of suckling rabbits, the laboratory results encouraged him to skillfully imitate it in the human situation. The two cases of his special operative management of such case were illustrative. Incidentally, Glasgow city also witnessed in 1957 an illuminating lung and liver publication. Likewise, the current genomic researches are blossoming in the Glasgow Institution named after Beatson.*

1. INTRODUCTION

I had indicated, elsewhere, that mankind had groped for ages on the drug treatment of cancer.¹ Also, surgical treatment began to flourish throughout the same time.² Perspicaciously, these contributions were forerunners of the relevant advance that was set in motion by George Beatson just before the close of the 19th century.

2. THE BEATSON CHALLENGE

It was left to Beatson³ to emphasize on animal experimental work. Note how he set about it as follows:

I obtained at the end of 1878 a license for performing the experiment of removing the ovaries from suckling rabbits. Through the kindness of Professor M'Kendrick I was able to carry my experiments out at the University laboratory. Space will not allow me to go into them in detail, but I may say that the three cases I tried all confirmed the fact. As long as the young ones were at the breast the milk-supply continued, and when eventually they were taken away, the milk supply ceased; but the creatures increased very much in size, and postmortem examination revealed that this was due to large deposits of fat around the various organs, and, above all, in the lumbarregion, where there were masses of pure adipose tissue, showing that the secretion of milk was still going on, but, not being discharged by the usual channels, was deposited in the various tissues of the body as fat.

His first case was illustrative thus: "I put to her husband and herself as to whether she should undergo the operation of removal of the tubes and ovaries. Its nature was fully explained to them both, and also that it was a purely experimental one, but that it could be done without risk to life; and that, if it should have no effect on the cancerous process, it would cause her no increase of suffering. She readily consented that I should do anything that held out any prospect of cure, as she knew and felt that her case was hopeless." Fortunately, in due time, the operated patient graduated to being "apparently in excellent health."

In this context, Beatson's candidly clear conclusions regarding both cases remain indelible. As he had soulfully put it, "I am also well aware that the views I have put forward are to a large extent problematical; but, whether accepted or not, I am sure I shall be acquitted of having acted thoughtlessly or recklessly, and it will be believed that in all I have done I have had some reason for the faith that is in me, and that I have been actuated solely by the motives that guide all of us in the exercise of our profession — primarily, the interests of those who place themselves under our care, and secondarily, the progress and advancement of the healing art." Accordingly, Beatson richly

deserves the commemoration which he has received through the establishment in Glasgow of the Beatson Translational Research Centre. It has fittingly been advertised as “a place that promotes intellectual and physical wellbeing, and stimulates positive advancement of research boundaries.”⁴

3. PERSONAL GLASGOW CONTRIBUTIONS

In principle, boundaries of knowledge need to be extended always. Thus, it was with the 1000 cases which, as a final-year medical student, I had collected largely from the Glasgow University Departments that I published on lung cancer in June 1957.⁵ Thereafter, on including the catchment from the then neighboring Royal Beatson Memorial Hospital, I added the findings on the spread of extra-portal tumors to the liver.⁶ This became possible because I spent 6 months gathering research materials instead of the usual practice of embarking on the statutory 1-year housemanship. In fact, this was carried out, on purpose, in my home country, Nigeria.

4. CURRENT GLASGOW INTEREST IN THE PANCREAS

Experimental work has recently been pursued in Glasgow as regards the pancreas with special reference to genomics. The harbinger of the good news is Professor Andrew Beankin who migrated from Australia. There he had found that “pancreatic cancer genomes reveal aberrations in axon guidance pathway genes.⁶ All told, work has also progressed along the lines of understanding pancreatic cancer genomes.⁷ As was concluded by his group,⁸ “we suggest that return of individual result is both feasible and ethically defensible but only within the extent of a robust framework that involves a close relationship between researchers and clinicians.” Moreover, they showed that genomic analysis reveals roles for chromatin modification and axon guidance in pancreatic cancer.⁹

5. DISCUSSION

Regarding drug discovery and development, Jubb, Koepper and Reis-Filho,¹⁰ who wrote the introduction to the Annual Review issue of the *Journal of Pathology*, highlighted “the central role for pathology in modern drug discovery and development.” In this context, I am persuaded that the ultimate end is to achieve necrosis of cancer cells in the body.¹¹⁻¹³ Incidentally, I have named what I consider to be research worthy as the “Erythrocyte Associated Necrosis Factor” (EANF).¹¹ In all probability, it is a gift to mankind by Nature! Indeed, much as Beatson advanced cancer research by appealing to animal experimentation, I have, by using my Glasgow materials, put together in a German book,¹⁴ 12 human models capable of throwing light on the different aspects of cancer metastasis research including target therapy of this awesome disease.

6. CONCLUSION

Simply stated, there is need to obtain during life the strategically situated necrotic pabulum being transported leisurely in the thoracic duct of consenting patients. This is easily assured by means of the new technique of intravital videomicroscopy.¹⁵ This instrument will assuredly help in retrieving the research worthy pabulum itself. This maneuver should lead to that breakthrough which Translational Medicine largely requires in order to discover the target therapy which could conduce to cancer cure.

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