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Use of used Refill Ballpoints as Pointers

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ABSTRACT

Pharmacometrics has retained its status in modern pharmacological research. Isolated tissue experiments form an important part of experimental pharmacology. Contractions of isolated tissues are very often recorded by using a recording device and a smoked paper. The key feature of having a good record is to minimize the friction between the smoked paper and the writing point of the recording device. Different types of writing points are in use despite of their disadvantages. We have developed a device to have a writing point from used refill ball point. In our experience, this simple modification improves the recordings of isolated tissue experiments.

Keywords: Pointers, isotonic contractions, recordings

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INTRODUCTION

Experimental pharmacology uses animals in various ways. Intact animals are essential for the acute, sub acute, and chronic toxicity tests that a new drug substance must undergo, and for important special tests such as teratology and carcinogenicity. Pharmacology per se tends to use excised (isolated) organs or tissues and animals that are surgically prepared in various ways to aid in the detection and study of target activities.[1]

Most of the pharmacology practical are regarding the study of drug action on biological systems. These are mostly done using organ preparations isolated from some of the commonly used laboratory animals such as Frogs, Guinea pigs, Albino Rats, Mice etc.[2]

Early in the development of pharmacologic techniques, it was found that an isolated organ or tissue remained functional for several hours in a bath containing a physiologic solution of salts through which oxygen was bubbled. Henrick Magnus (1802–1870) first applied this method to a strip of small intestine, Jean-François Heymans (1904) worked with the mammalian heart, and Claude Bernard experimented with isolated nerve–muscle preparations.

The organ or tissue is so suspended that the contraction or relaxation of the muscle is mechanically transmitted to a stylet. The stylet writes on a drum covered with smoked paper rotated by clockwork at a constant speed. This device, called a kymograph, graphically records motion or pressure. The effects of drug substances added to the bath can thus be visualized. The kymograph is a relatively crude device. In modern laboratories, organ and tissue movements are transmitted by force transducers to polygraph machines, which produce similar tracings. Or the polygraph is replaced by computerized equipment that issues a digital record.[1]

Pharmacometrics measures the pharmacological responses qualitatively and quantitatively. Isotonic contractions of isolated tissues are very often used for undergraduate teaching, postgraduate teaching and pharmacological research. The isotonic contractions of the tissues are recorded by using a smoked paper and a marking device, so as to have a record.[1, 2] One of the key factors is to minimize the friction between the smoked paper and the writing point. It has been observed that thickly smoked (jet black) paper and rough pointer produce more friction and gives a poor quality of record. Uniform and lightly smoked (light chocolate) paper and a smooth writing point will definitely produce high-quality recordings. M. N. Ghosh (1984) has advocated the use of glass pointer, pointers made from X-ray film, parchment paper or light celluloid.[2, 4]

The metal writing point produces more friction at the smoked paper and therefore, the pointers other that the metal should be preferred. Pointers made from X-ray film and other hard paper

suffer with the same disadvantage. Glass pointer prepared by an experienced person produces a quality recording of the contractions of isolated tissues. Since, glass pointers are easily broken with rough handling, meticulous use is essential. Additionally, preparation of good quality of glass pointers is a tedious and skillful work. Pointers made up of sealing wax are now rarely used because they are easily broken and skill in their making is obligatory. Some of the experimental pharmacological laboratories use ink well pointers to record the isolated tissue contractions on an unsmoked paper. Blockade of the lumen with dried ink and friction due to metal pointers are the major limiting factors. However, timely washing and cleaning of such pointers will circumvent the subsequent blockade.

We have developed a recording device from the used refill of a ball pen. The writing point is given an approximate angle of 100^0- 120^0 by passing it through the flame of the candle for a moment. Used refill is exposed to heat at a point about 15 mm away from the ball point to have the desired angle. This requires a minimum proficiency and can be easily prepared. Aptly angled refill pointer then is fixed to the writing limb of the liver by using Feviquick or any other adhesive. Such a writing point offers minimal friction at the appropriately smoked paper and produces a superior quality of recordings of the contractions of isolated tissues. Additionally, used refill pointer is more sturdy and unbreakable and thus is long lasting. We found, this simple modified writing device made from used refill ball point produces superior quality tracings and works as a better alternative to the commonly used recording devices.

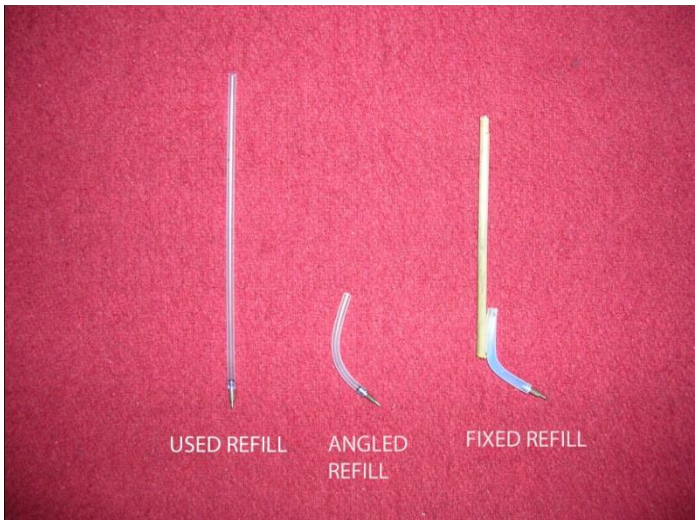

Photo showing the pictures of Used, Angled and Fixed refill

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