

method for dilatation and curettage in the menopause age group. For encephalograms it was preferable to pentothal sodium or avertin. The topical applications were made mostly with four per cent metycaine. . . . The most important advance in methods of anesthesia during the past year at this hospital was the addition of continuous or fractional spinal anesthesia to our armamentarium. . . . All cases of extensive or poor-risk surgery were given oropharyngeal oxygen. . . . We will continue to use liberally pure oxygen as a supplement to any type of anesthesia. . . . All the ether anesthetics were used for tonsillectomies." 2 references.

J. C. M. C.

CLARK, L. H.: *Some Dangers Involved in the Use of Anaesthetics in X-ray Departments*. Radiography 10: 25-27 (Apr.) 1944.

"It is doubtful . . . if the ordinary electrical equipment found in the average X-ray department, quite apart from the X-ray units themselves, complies with the standards which have been adopted as necessary for safety in operating theatres. . . . Ether cannot be administered with safety in the X-ray room and its use must be prohibited. When ether is used as an anesthetic in the operating theatre a portable X-ray apparatus must not be brought into operation until the ether bottles have been removed and the room and the patient's air passages are clear of the vapour. . . . The use of ether-air and ether-oxygen mixtures for anesthesia has, doubtless, great advantages in certain cases, but as these mixtures are explosive, it is of the utmost importance to remove all possible causes of ignition wherever they are used. . . . The possibility of static electricity being produced by friction in the operating theatre and the means for dissipating it led to investigations

in many laboratories. . . . Electricity is frequently produced by the movement of fabrics, blankets and sheets over trolleys well insulated by rubber tyres. . . . The generation of static electricity is much easier in a dry atmosphere than in a damp one."

J. C. M. C.

HADFIELD, C. F.: *The Use of Anaesthetics in X-ray Departments*. Radiography 10: 17-23 (Mar.) 1944.

"For many years the danger of the ignition and explosion of various anaesthetic vapours has been a very real one. This is especially the case in countries like the United States and Canada, where the humidity of the air is apt to be greatly reduced either by high atmospheric temperatures or equally, and this is perhaps not so generally appreciated, by very cold dry spells which, owing to the freezing and precipitation of all moisture, also result in the air becoming very dry. . . . In recent years and in spite of no appreciable improvement in British weather, anaesthetic explosions, although still very rare, if expressed in percentages of anaesthetics administered, have still been sufficiently frequent, and sufficiently disastrous, to call urgently for serious investigation. . . . The more one can adopt procedures that will make explosions impossible at ordinary operations, the better the position with regard to X-ray departments. . . . There is now so many non-inhalation methods and agents of anaesthesia that if any danger is anticipated, a suitable one can be usually selected. . . . There are all forms of local analgesia. . . . We have new developments of an old, but long ago discontinued, method—that is intravenous anaesthesia. . . . Then again, a great deal can be done by a combination of one of the above methods with what we call premedication. . . . The use of these particular

methods is not always suitable or convenient, and so the administration of an inhalation anaesthetic is required.

... Nitrous oxide itself is neither ignitable nor explosive and its use (by itself) in an X-ray department is entirely safe. The difficulty with it is that it is a somewhat weak anaesthetic and can seldom be relied on to give the relaxation and sometimes even the immobility for the purpose required. . . . Although it will not itself burn, it will, under suitable conditions, support the ignition of other inflammable gases as much as or even more than oxygen itself. . . . The lesson to be learned from this is, that although nitrous oxide is in itself free from all danger of ignition, yet if combined with an ignitable vapour, such as that of ether, the combination may be as combustible as a mixture of ether vapour with air or even oxygen. . . .

"Ether vapour is, of course, highly ignitable, and at certain strengths mixtures of air (or oxygen) with ether vapour are highly explosive. As with other similar vapours, the degree of first ignitability and then of explosibility depends on the percentage of the mixture. . . . So if we could only be sure that we were using an ether vapour either too strong or too weak to ignite, its employment in the presence of a spark or flame would be quite safe. As a matter of practice, of course, we could never be sure of any such thing. . . . What I have said of ordinary ether—ethyl ether—is equally true of vinyl ether or vinesthene. With chloroform the conditions are entirely different. By no means that I am aware of, and certainly under no conditions known in the practice of anaesthesia, can chloroform be made to catch fire or explode. As far as this question is concerned, the use of chloroform in an X-ray department is entirely safe. . . . Its safe administration demands skill, experience, and very close observation.

... To give chloroform again in an X-ray department where absolute or semi-darkness may be the rule is simply courting trouble. So you will see that in spite of its freedom from all explosion dangers I am not recommending the indiscriminate use of chloroform in X-ray departments. . . . Ethylene . . . as regards explosions . . . is anything more dangerous than ether. Cyclopropane . . . is as explosive as ethylene and must never be used there is the slightest danger of ignition. Ethyl chloride . . . is very inflammable. . . . The only other anaesthetic to which I wish to draw your attention is trichlorethylene, which is now generally known under the trade name of Trilene. . . . From our present point of view its great charm is that, unlike all the other newer agents, it is neither ignitable nor explosive. I must admit, however, that since its use became general some workers have found that under certain conditions of high temperature it can be made to ignite. Further work on this subject is in progress, but I am inclined to believe that the conditions necessary for ignition are so exceptional that as far as its use in X-ray departments is concerned they may be neglected. . . . Unless the absence of any spark or other source of ignition can be absolutely guaranteed, no ignitable anaesthetic of any kind can be safely used in an X-ray department."

J. C. M. J.

MOCK, H. E., AND TANNEHILL, E. H.: *Fractured Pelvis Complicated by Gangrene of Extremity—Amputation under Refrigeration Anesthesia.* Surg., Gynec. & Obst. 78: 429-433 (Apr.) 1944.

"Rarely is the complication of gangrene of the lower extremity following fractures of the pelvis mentioned in the literature on this subject. The fact that one of the authors has had the

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