LETTERS TO THE EDITOR

Dear Editor:

While reading, "The Case for Bubble Oxygenators" by W. G. Maurer, appearing in the November-December issue of the Journal, I experienced the distinct feeling that the material was familiar. Proceeding to the library, I selected "Annals of Thoracic Surgery" Vol. 17, No. 4, May 1974. On page 459, is an article I wrote over ten years ago, "Blood-Gas Interface Oxygenators Versus Membrane Oxygenators: What Are the Proved Differences?" The beginning of this article bears a remarkable resemblance to the material in the beginning of Mr. Maurer's article. Not only are the references, observations, and conclusions nearly identical, but the wording is remarkably similar. For example, Mr. Maurer writes:

> "Let's examine these reports to see how they apply to the problem of the extracorporeal oxygenation of blood. Bull and Neurath shook an egg albumin mixture in a glass bottle at 2 degrees centigrade. They found that protein denaturation occurred most rapidly at a 4.8 pH, but virtually no denaturation took place even after 12 hours at a 7.4 pH."

The older article stated it thusly:

> "Let us now examine these reports to see how closely they apply to the problem of extracorporeal oxygenation of blood. Bull and Neurath (3) shook an egg albumin mixture in a glass bottle at 2°C. Protein denaturation took place most rapidly at pH 4.8, but at pH 7 virtually no denaturation took place even after twelve hours."

Mr. Maurer's use of the first person, singular is particularly interesting:

> "I will concede that membrane oxygenators (M.O.) are basically different — but certainly not superior to the bubble type oxygenator."

The older article was a bit more subdued:

> "There is little doubt that membrane oxygenators are basically different from* — blood-gas interface oxygenators."

Since the older article is not referenced in Mr. Maurer's article, we must assume that Mr. Maurer is presenting these observations, conclusions, and the written expression of them as his own work. Could it really be that Mr. Maurer read all of those old articles as I did, came to the same conclusions I did, and expressed his observations with remarkably similar language? Ten years later?

Sincerely,

Kenneth L. Kayser

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Dear Editor:

As Mr. Kayser has pointed out I certainly did fail to reference his earlier work and for this I wholeheartedly apologize.

There was never any intention on my part not to credit Mr. Kayser's excellent article as it provided me with many of the background articles and much of the argument against the blood-gas interface as a major source of protein denaturation.

My article was originally prepared as an oral presentation in a point/counterpoint type format and not for publication. Only after my presentation was solicited for publication did I go back and reference the sources, unfortunately, in my haste to meet the J.E.C.T. publication deadline I failed to reference the manuscript completely.

Again, I apologize to Mr. Kayser and also to my colleagues for my inexcusible oversight.

Sincerely,

William G. Maurer, B.S., C.C.T.

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Article available at https://ject.edpsciences.org or https://doi.org/10.1051/ject/198416241

Dear Editor:

I wish to make a case for a national cooperative perfusion survey. Many books and papers have been written discussing ideal clinical parameters with much time spent discussing and rediscussing specific individual interests of those perfusionists willing and able to contribute to the literature. It is long past due to take subjective discussions and create objective clinical data.

We hear barroom talk regarding a hospital attempting to have p02's in the 300 to 400 range with no apparent neurologic problems, groups pumping with ACTs at twice control, groups cooling patients to 15 degrees and groups not cooling at all — the list goes on and on.

The technology is available. My group has created a computer program with a local company with which we have now monitored 1200 patients. The data has given us better insight as to how we run perfusion, but it doesn't answer the much larger question, "What impact do different methods of perfusion have on patients?"

The enclosed computer perfusion form is an example of what could be used. Our practice is limited to adult cardiac cases. Yet the perfusion form questions can easily be changed to reflect any type of equipment, manner of perfusion, or surgical procedure.

I propose the following:

(A) Create a double blind study approximately 30 days in length. Individual hospitals will not be identified.

(B) Apply for funding from the new AMSECT research fund or local heart associations. This money is for computer time. I will not be paid for my participation.

If you wish to participate, please write me a note describing the type of practice with which you are associated (i.e., adult or pediatric). Please include your anticipated 30 day case load.

Upon receipt of your note, you will be sent a detailed guide to the questionnaire describing what can and cannot be done. I will attempt to comply with every possible nuance of perfusion but within the limits of 60 questions some items will be omitted. After looking at the membership's proposed changes, a final computer form will be formulated and sent to the participants.

I am convinced that we can pull this formidable task off with cooperation from the membership. A 30-day effort should be all that is necessary to compile a meaningful data base.

Armed with this data, we can advance our field of expertise tremendously.

I look forward to hearing from the membership.

Respectfully,

Richard P. Schultz, P.A., C.C.P.
Northwest Surgical Associates

EXTRACORPOREAL CIRCULATION SERIES OXYGENATORS

NAME_____UNIT # _____

_____ 1 Demog. number: Assigned by computer. . . was_____
_____ 2 Previous entry #: Assigned by computer. . . was_____
_____ 3 DATE OF USE: Month_____, Day_____, Year_____
_____ 4 OXYGENATOR: 1 = H-1500, 2 = BOS 10S, 3 = SHILEY, 4 = COBE II, 5 = CML, 6 = H-1300, 7 = H-1700
_____ 5 OXYG SER #: ENTER SER OR LOT #_____
_____ 6 CARDIOT RES: 0 = NONE, 1 = Q220F, 2 = SHILEY, 3 = COBE, 4 = HARVEY, 5 = J&J, 6 = BCR 3500
_____ 7 CARD RES SERIAL: ENTER SER OR LOT #_____
_____ 8 ARTERIAL FILTER: 0 = NONE, 1 = INTERCEPT, 2 = SHILEY SAF-20, 3 = AF-1025
_____ 9 ART FILT SER #: ENTER SER OR LOT #_____
_____ 10 PRIME: 1[ ] = D5LR, 2[ ] = HESPAN, 3[ ] = NORMOSOL-R, 4[ ] = L. RING, 5[ ] = BLOOD ADDED, 6[ ] = BLOOD PRIME, 7[ ] = 10% MAN
_____ 11 ADDED TO PRIME: 1[ ] = NONE, 2[ ] = NAHCO3, 3[ ] = NEO, 4[ ] = VASOXYL, 5[ ] = CaC12, 6[ ] = KCL, 7[ ] = LASIX
_____ 12 TOTAL PRIME VOL: ENTER TOTAL AMOUNT OF PRIME IN ML
_____ 13 PA ASSISTANT: 0 = UNK, 1 = S MCKEAN, 2 = L COLBURN, 3 = S DUNLAP, 4 = C PETERSEN, 6 = R SCHULTZ, 7 = MD
_____ 14 SAT METER #: Enter Meter # (or #'s) in order of use (A/V)
_____ 15 EXTRA DEVICES: 1[ ] = SWANK FILT, 2[ ] = PREBYPASS FILT, 3[ ] = CELLSAVER, 4[ ] = HEMO-CONCEN, 5[ ] = BUBBLE TRAP, 6[ ] = DIAFILTER, 7[ ] = SORENSON BLD RECYCLE SYSTEM
_____ 16 GRAFTS: Enter number of grafts
_____ 17 OPERATION: 1[ ] = AVR, 2[ ] = AVC, 3[ ] = MVR, 4[ ] = MVC, 5[ ] = ASO, 6[ ] = VSD, 7[ ] = LV ANEURYSM
_____ 18 OPERATION: 1[ ] = AORTIC ANEUR, 2[ ] = CAROTID ENDART, 3[ ] = OTHER
_____ 19 FASTING GLUCOSE: ENTER ACTUAL PRE-OP FBS
_____ 20 GASES: ENTER NO OF GASES TAKEN
___ ___ ___ ___ ___ ___ 21 TEMPERATURE: Enter temp in Deg C at time of gas
___ ___ ___ ___ ___ ___ 22 BLOOD FLOW: ENTER FLOW IN LPM × 10
___ ___ ___ ___ ___ ___ 23 OXYGEN FLOW: LPM × 10
___ ___ ___ ___ ___ ___ 24 CO2 FLOW: cc div. by 10
___ ___ ___ ___ ___ ___ 25 FIO2: ENTER ACTUAL %
___ ___ ___ ___ ___ ___ 26 HgB: ENTER Hgb × 10
___ ___ ___ ___ ___ ___ 27 PO2 (LAB): pO2 div by 10
___ ___ ___ ___ ___ ___ 28 PCO2 (LAB): ENTER ACT PCO2
___ ___ ___ ___ ___ ___ 29 Ph: ENTER LAST TWO DIGITS
___ ___ ___ ___ ___ ___ 30 ARTERIAL SAT: ENTER SAT % AS WHOLE #
___ ___ ___ ___ ___ ___ 31 VENOUS SAT: ENTER ACT % AS WHOLE #
___ ___ ___ ___ ___ ___ 32 VEN SAT (LAB): Enter V Sat % from lab
___ ___ ___ ___ ___ ___ 33 BLD GLUCOSE: ENTER LAB # div by 10
___ ___ ___ ___ ___ ___ 34 MIN. PUMP ON: (any time › 200 min is 200)
_____ 35 TIME PUMP ON: IN MILITARY TIME
_____ 36 PUMP TIME: ENTER TIME IN MINUTES
_____ 37 XC TIME: ENTER TIME IN MIN (TOTAL)
_____ 38 BSA: ENTER BSA × 100 ie: 1.87 is 187
_____ 39 PRE-OP WEIGHT: ENTER weight in Kg (ROUND TO WHOLE #)
_____ 40 CARDIOPLEGIA VOL: ENTER VOL IN CC AND ZERO FOR BLD PLEGIA
_____ 41 ICU GLUCOSE: GLUCOSE ON ARRIVAL TO ICU
_____ 42 1hr POST-OP GLU: GLUCOSE 1hr AFTER ARRIVING IN ICU
_____ 43 ADDED VOLUME: ENTER AMOUNT IN ml
_____ 44 PRE CPB GLU: ENTER GLU VALUE DRAWN IMMED BEFORE BYPASS
xx 45

_____ 46 URINE OUTPUT: ONLY ENTER CPB OUTPUT, IN CC

xx 47

_____ 48 PLATELETS (PRE): ACTUAL LAB # (LAB # × 1000 IS PLAT COUNT

_____ 49 PLATELETS (POST): ACTUAL LAB # (LAB # × 1000 IS PLAT COUNT

_____ 50 DIABETIC: 0 = NONDIAB, 1 = IN STUDY-INSUL, 2 = INSULIN DIAB-NIS, 3 = ORAL DIAB-NIS, 4 = IN STUDY-ORAL, 5 = NONDIAB-IN STUDY

_____ 51 POST-OP BLEED: 50 is UNK, ENTER TOTAL cc's OUT

_____ 52 DEVICE COMPLICAT: 1[ ] = ART FILTER, 2[ ] = RESERVOIR, 3[ ] = TUBING/CONNECTORS, 4[ ] = 02 DELIVERY, 5[ ] = PUMP, 6[ ] = SARNES, 7[ ] = SAT METER/RESULT

_____ 53 EEG REPORT: 1[ ] = No change or changes with rewarming or anes.,
2[ ] = Non-sign. changes other than #1 or #4,
3[ ] = Sign. changes,
4[ ] = Changes with questionable or unk sign,

_____ 54 EEG ON/AFTER BYP: 1[ ] = NO CHANGE, 2[ ] = NOR p PUMP, 3[ ] = SLOW ON REWARM, 4[ ] = DIMIN ACT, 5[ ] = POSS CHANGES, 6[ ] = DEFIN CHANGES, 7[ ] = TRANS CHANGES,

_____ 55 NEURO COMP: 0 = NO, 1 = MILD (Perf), 2 = MILD(Non-perf), 3 = SEV(perf), 4 = SEV(non-perf), 5 = CONFUSION, 6 = SEV(unk-etiol)

_____ 56 ANESTH: 0 = UNK, 1 = J BASS, 2 = J COPPERMAN, 3 = J ROBB 4 = G WRIGHT, 6 = N MECKLEM, 7 = EMANUEL MD

_____ 57 SURGEON: 0 = UNK, 1 = S PAGE, 2 = J BIGELOW, 3 = A KRAUSE, 4 = N SALOMON 7 = E OKIES, 8 = PA, 9 = OTHER,

_____ 58 PERFUSIONIST: 0 = UNK, 1 = S MCKEAN, 2 = L COLBURN, 3 = S DUNLAP, 4 = C PETERSEN, 5 = R KING, 6 = R SCHULTZ

_____ 59 Trans. to new #: Entered later by system if reop performed.

_____ 60 Status: 1 = ALIVE, 2 = DIED OR, 4 = OXYGENATOR CHANGED OR REOP