An analysis of consultations with the crowd doctors at Glasgow Celtic football club, season 1999–2000

M Crawford, J Donnelly, J Gordon, R MacCallum, I MacDonald, M McNeill, N Mulhearn, S Tilston, G West

Abstract

***Objective*—To analyse all clinical presentations to the crowd doctors at Scotland's largest football stadium over the course of one complete season.**

***Methods*—A standard clinical record form was used to document all consultations with the crowd doctors including treatment and subsequent referrals. The relevance of alcohol consumption was assessed.**

***Results*—A total of 127 casualties were seen at 26 matches, a mean of 4.88 per match. Twenty casualties were transferred to hospital, including one successfully defibrillated after a cardiac arrest. Alcohol excess was a major contributing factor in 26 cases.**

***Conclusions*—The workload of the crowd doctors was very variable and diverse. The social problem of excessive alcohol consumption contributed considerably to the workload. The provision of medical facilities at football grounds means that attendance there is now one of the least adverse circumstances in which to have a cardiac arrest. The study confirmed previous impressions that more casualties are seen at high profile matches.**

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Hairmyres Hospital, East Kilbride, Scotland, UK
M Crawford

The Royal Infirmary, Lauriston Place, Edinburgh EH3 9YO, Scotland, UK
J Donnelly

Accident and Emergency Department, The Royal Alexandra Hospital, Paisley PA2 9PN, Scotland, UK
J Gordon

Accident and Emergency Department, Victoria Infirmary, Glasgow G42 9TY, Scotland, UK
R MacCallum

162 Nithsdale Road, Glasgow G41 5RU, Scotland, UK
I MacDonald

Glasgow Royal Infirmary, Glasgow G4 0ST, Scotland, UK
M McNeill

General Medicine, Falkirk and District Royal Infirmary, Majors Loan, Falkirk FK1 5QE, Scotland, UK
N Mulhearn

Department of Dermatology, Monklands Hospital, Monkscourt Avenue, Airdrie ML6 0JS, Scotland, UK
S Tilston

Woodside Health Centre, Barr St, Glasgow G20 4RL, UK
G West

Correspondence to:
Dr MacDonald, 5 Merrylee Road, Glasgow G43 2SH, Scotland, UK
ian_macdonald31@hotmail.com

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There have been three major disasters in one generation at British football grounds: at Ibrox Park in 1971 causing 66 deaths, at Bradford in 1985 causing 40 deaths, and most recently at the Hillsborough Stadium in Sheffield in 1989 causing 95 deaths. In the aftermath of these tragedies, there have been substantial changes in the requirements for the provision of safety at football grounds. These followed recommendations in the Wheatley report[1] published after the Ibrox disaster, and then more comprehensively in the Taylor report[2] into the Hillsborough Stadium disaster. In conjunction with the Taylor report, the Gibson report[3] made specific recommendations for the provision of medical care at football grounds. These recommendations have been described in previous articles on this subject by other authors.[4 5]

A central recommendation of the Gibson report was the responsibility for clubs to provide suitably trained and equipped crowd doctors. Attention has recently been drawn to the incomplete implementation of this recommendation in Scotland.[4] The authors are the crowd doctors for Glasgow Celtic, one of Scotland's leading football clubs. Since the development of its new enlarged stadium, Celtic now require three crowd doctors for each game. These doctors are drawn from the disciplines of accident and emergency medicine, anaesthetics, and general practice, ensuring the provision of a good mixture of skills. There is a consultant anaesthetist at every game, ensuring that the highest level of resuscitation skills is always available. The general practitioners involved have obtained Advanced Life Support Provider certification from the UK Resuscitation Council. The accident and emergency consultant and one general practitioner have the Major Incident Medical Management and Support (MIMMS) certificate. At virtually every game there is a MIMMS trained doctor on duty.

The crowd doctors are in radio contact with the Scottish Ambulance Service control point and work from the trackside or upper tier of the stadium alongside the other medical care providers. There are four ambulance crews (one paramedic and one technician) and an ambulance incident officer at every game, with the Emergency Support Unit vehicle also in attendance. There are in addition another two ambulance paramedics and two technicians whose responsibility is the safe removal of injured players from the field of play. Finally there are 50–60 voluntary first aid workers from the St Andrew's Ambulance Association, whose skills and commitment are indispensable.

An essential responsibility of the crowd doctors is to manage the initial medical response to a major incident. Celtic has a major incident plan, which is regularly updated, most recently after a large tabletop exercise at the stadium last year. This was attended by the crowd doctors along with representatives of the club, the emergency services, and local authority services. It is hoped, however, that the likelihood of such an incident has been reduced substantially by measures such as all seated stadia, all ticket games, and improved stewarding.

The routine work of the crowd doctors is to treat the casualties referred to them by first aid or ambulance service workers. This is a study of all such consultations during the season 1999–2000.

Methods

An audit form (fig 1) was used to document every consultation with the crowd doctors during the season 1999–2000. In addition to the clinical notes, information was obtained about

GAME: CELTIC v _____

DATE: _____ DOCTOR: _____

NAME: _____

AGE: ____

RESIDENCE (e.g. Glasgow, Aberdeen) _____

CLINICAL NOTES:-

INDICATE (if not already included in clinical notes)

(1) ALCOHOL - Major Relevance Minor Relevance No Relevance

(2) TIME OF ACCIDENT/ILLNESS - Related to attendance at game
Unrelated to attendance at game

(3) INDICATE IF e.g. Catering Staff, Stewards, etc

Figure 1 Audit of consultations at Celtic Park, 1999–2000 season.

the patient's age and town of residence. An assessment was made of whether alcohol use was a contributing factor to the clinical presentation and of whether the reason for the consultation was directly related to attendance at the game. It was noted if the patient was attending the game in any capacity other than as a spectator.

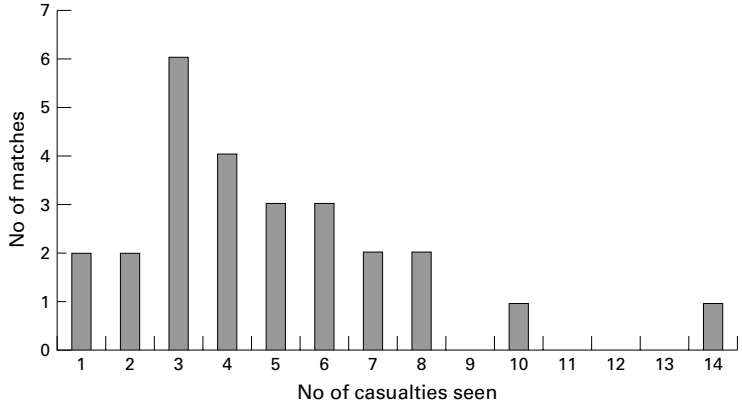

Figure 2 Number of casualties at each match.

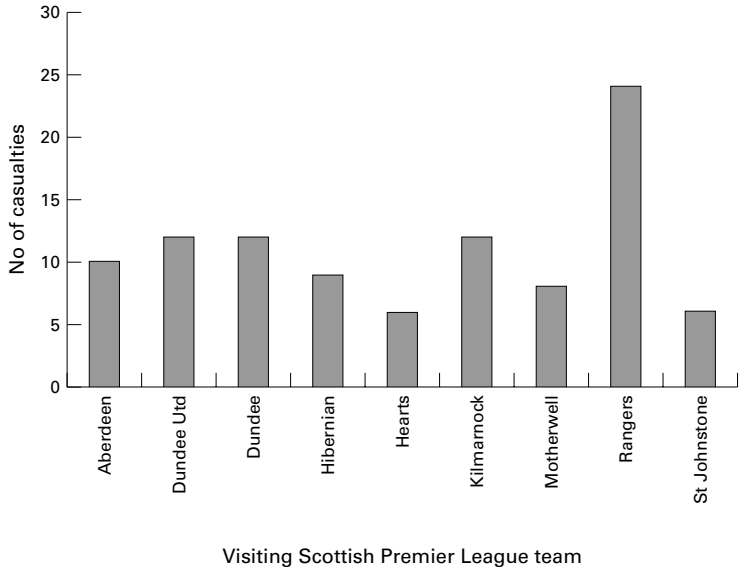

Figure 3 Combined total of casualties at two games against each of the Scottish Premiership League opposing teams.

Table 1 Casualties seen while attending in capacity other than spectator

Capacity	*Number*
Catering staff	11
Stewards	7
Ground staff	1
BBC staff	1
SAS paramedic	1

BBC, British Broadcasting Corporation; SAS, Scottish Ambulance Service.

Results

There were 26 fixtures played: two preseason matches (average attendance 56 015), 18 Scottish Premiership League (SPL) matches (average attendances 54 542), three European ties (average attendance 48 739), one CIS Cup match (attendance 40 260), one Scottish Cup match (attendance 34 389), and one challenge match (attendance 20 000). The average overall attendance was 51 271.

A total of 127 casualties were treated by the crowd doctors, a mean of 4.88 per match. There were casualties at every game, in numbers ranging from one to 14; fig 2 shows the distribution. In the SPL, two home matches are played against each of the other nine teams in the league. Figure 3 shows the combined totals for these matches.

The mean age of the casualties was 29.62 years (range 2–73 years), 95 (74.8%) being male and 32 (25.2%) female, with 10 casualties (7.9%) being children under the age of 12. The home of 34 (26.8%) of the casualties was more than 30 miles from Glasgow, with seven (5.5%) being from England and three (2.4%) from Ireland. For 27 (21.2%), their attendance was judged to be an opportunistic use of medical advice and to have no relation to illness or accident on the day of the match. Of the total casualties, 21 (16.5%) were attending in a capacity other than as a spectator (table 1).

The effects of excessive alcohol had a substantial impact on the workload. For eight casualties (6.3%), inebriation was the primary diagnosis, and for another 18 (14.2%) it was a factor of major relevance. For another five casualties (3.9%), alcohol use was judged to be a minor contributing factor to their symptoms.

Of the total casualties, 20 (15.7%) were transferred to hospital for further assessment and treatment; in seven of these cases alcohol excess was the primary diagnosis or a major contributory factor. A further seven casualties (5.5%) were advised to seek further treatment from their own doctor or local accident and emergency department after the game.

There was one cardiac arrest, successfully resuscitated and transferred to hospital, with a subsequent satisfactory outcome.

Table 2 shows the very varied nature of the clinical presentations of the casualties seen.

Table 2 List of casualties seen at Glasgow Celtic Football Club in the 1999–2000 season

Date	Opposition	Age	Sex	Clinical information	Relevance of alcohol	Timing in relation to game	Treatment/outcome
24/7/99	Leeds Utd	29	Female	Collapse, inebriated	Major	Related	Discharged
		10	Male	Viral illness	None	Unrelated	Paracetamol
		19	Female	Collapse	None	Related	Reassured
		30	Male	Foreign body (FB) in ear	None	Related	FB removed
27/7/99	Newcastle Utd	34	Male	Collapse, sweaty; previous MI	Minor	Related	Aspirin, hospital
		28	Male	Epileptic ; ?aura	Major	Related	Observation, reassured
		41	Female	Finger injury	None	Related	Reassured
		17	Female	Wrist sprain	None	Related	Reassured
7/8/99	St Johnstone	22	Male	Toothache	None	Unrelated	Paracetamol
26/8/99	Cwmbran Town	18	Male	Nausea, dizziness	None	Related	Reassurance
		63	Male	Left knee gave way	None	Related	Left knee locked, hospital
		19	Male	Dog bite on thigh	None	Related	Abrasions cleaned
29/8/99	Hearts	34	Male	Migraine	None	Related	Paracetamol
		25	Male	Swallowed wasp and vomited	Minor	Related	Observation, discharged
		38	Male	Anxiety, intoxicated	Major	Related	Observation, reassurance
16/9/99	Tel Aviv	41	Female	Hot splash to left eye	None	Related	Eye bath
		22	Female	Pregnant. Brief abdominal pain	None	Related	Examined and reassured
16/10/99	Aberdeen	50	Male	Angina	Minor	Related	Nitrolingual spray
		30	Male	Headache	None	Related	Paracetamol
		31	Male	Bereavement	None	Unrelated	Advice
		51	Male	Injury to knee	None	Related	Reassured
		15	Male	Alcohol and ecstasy ingestion	Major	Related	Hospital
27/10/99	Motherwell	13	Male	?Viral illness	None	Related	Reassurance
		73	Male	Brief chest pain. Previous MIs	Major	Related	Examined and reassured
		23	Male	Assaulted outside ground. Scalp laceration	Minor	Related	Hospital for suturing
		42	Male	Collapse. Chest pain	Major	Related	Hospital
		19	Male	Asthma	Minor	Related	Salbutamol inhaler
		16	Female	Minor burns to hand	None	Related	Reassured
		9	Male	Minor head injury	None	Related	Reassured
30/10/99	Kilmarnock	30	Male	Injury to right knee—swollen and locked	None	Related	Hospital
		71	Male	Head injury	None	Related	Observation, then discharged
		71	Male	Asthma	None	Related	Salbutamol inhaler
		2	Male	Injury to left forearm ?greenstick fracture	None	Related	Father to take to A&E
		52	Male	Hypertension, confusion. TIA	None	Related	Hospital
		56	Male	Angina	None	Related	Nitrolingual spray
4/11/99	Lyon	26	Male	Fall: head, face and shoulder injury	Major	Related	Hospital
		16	Female	Burn to right forearm	None	Related	Cold water
		19	Male	Severe facial injury	Major	Related	Hospital
		14	Male	Inebriated	Major	Related	Hospital
		46	Female	Migraine	None	Related	Paracetamol
		22	Female	Fall: injury to coccyx	None	Related	Paracetamol
		18	Male	Grand mal, post ictal	None	Related	Hospital
1/12/99	Dundee	12	Female	Abdominal pain	None	Unrelated	Reassured
		38	Female	Asthma	None	Related	Salbutamol inhaler
4/12/99	Hibernian	29	Male	?Scaphoid fracture	None	Related	Advised to attend A&E
		38	Male	Vasovagal episode	None	Related	Reassured
		16	Male	Torticollis	None	Unrelated	Cocodamol
18/12/99	Dundee Utd	24	Male	Shoulder injury	None	Unrelated	Reassured
		34	Male	Collapse, intoxicated	Major	Related	Left in police custody
		16	Male	Viral illness	None	Unrelated	Reassured
		40	Male	Minor scalp laceration, struck by coin	None	Related	Wound cleaned
		38	Male	Intoxicated; refused entry to ground	Major	Related	Examined
		16	Male	Viral illness	None	Unrelated	Paracetamol
		20	Male	Collapse, faked seizure	Major	Related	Left in police custody
		41	Female	Superficial scalp scald	None	Related	No treatment
27/12/99	Rangers	24	Female	Migraine	None	Related	Paracetamol
		12	Male	Bruise to forehead - struck by coin	None	Related	Ice
		29	Male	Injury to left knee	None	Related	Ice, tubigrip, paracetamol
		15	Male	Headache	None	Related	Paracetamol
		36	Male	Dizziness	Major	Related	Reassurance
		55	Female	Asthma	None	Related	Salbutamol inhaler
		18	Male	Vomiting	Major	Related	Examined and reassured
		38	Male	?Corneal abrasion	None	Related	Advised to attend A&E after match
		31	Male	Facial wound	None	Related	Advised to attend A&E after match
		21	Male	URTI	None	Unrelated	Reassured

Table 2 continued on next page.

Table 2 continued

Date	Opposition	Age	Sex	Clinical information	Relevance of alcohol	Timing in relation to game	Treatment/outcome
1/2//00	Bayern Munich	5	Female	Hit on face by football	None	Related	Reassured
		5	Male	Toothache	None	Related	Paracetamol
		58	Male	VF cardiac arrest	None	Related	Almost immediate BLS. Defibrillated at first attempt. → Hospital
5/2//00	Hearts	25	Male	Jumped off wall on way to game. Injury to left os calcis	None	Related	Advised to attend A&E after match
		16	Female	Vasovagal episode	None	Related	Reassured
		11	Male	Headache and nausea	None	Related	Paracetamol
8/2//00	Inverness CT	8	Male	Thumb injury	None	Related	Advised to attend A&E after game
		18	Male	Facial injury	Minor	Related	Reassured
		31	Female	Asthma	None	Related	Salbutamol inhaler
1/3/00	Dundee	31	Male	Agitated following bereavement	Major	Related	Reassurance
		14	Male	Abdominal pain	None	Related	Hospital
		45	Male	24 hour BP monitoring; cuff would not deflate	None	Related	Cuff removed
		39	Male	Eye scratch	None	Related	Eye pad. Chloromycetin ointment
		25	Male	Ankle sprain	None	Related	Tubigrip
		32	Male	Aches after RTA	None	Unrelated	Abrasions cleaned and dressed
		50	Male	Infected hand wound	None	Unrelated	Advised to attend A&E after match
		44	Female	Regular self catheterisation; had forgotten catheter	None	Unrelated	No catheter available
8/3/00	Rangers	15	Female	Low back injury after a fall	None	Related	Reassured
		18	Female	Fall: injury to elbow	None	Related	?Fracture radial head; hospital
		36	Male	Low back injury after a fall	Minor	Related	Reassured
		31	Male	Assaulted: scalp laceration	Minor	Related	Reassured
		19	Male	Fall: injury to shoulder	Major	Related	?Fractured clavicle; hospital
		38	Male	Low back injury	None	Related	Reassured
		34	Male	Fall: injury to back	Major	Related	Reassured
		25	Male	Asthma	Minor	Related	Salbutamol inhaler
		51	Male	Chest pain; previous CABGx2	Minor	Related	IV access, oxygen, aspirin,; hospital
		39	Male	Fall: head injury and laceration	Major	Related	Wound cleaned and stapled
		50	Female	Thigh pain following recent RTA	Major	Related	Reassured
		17	Male	Back injury; hysterical paralysis	None	Related	Hospital
		14	Female	Fall: ? fractured coccyx	None	Related	Hospital
		50	Female	Hand laceration	None	Related	Cleaned and dressed
11/3/00	St Johnstone	37	Male	Hand laceration	None	Related	Advised to attend A&E
		66	Male	Collapse: ?cause	None	Related	Taken by son to A&E
		20	Male	Skin rash	None	Related	Reassured
		32	Male	Cellulites of leg	Major	Unrelated	Advised to see own GP
		45	Female	Oral swelling	None	Related	Reassured
2/4/00	Kilmarnock	25	Male	Headache	None	Related	Paracetamol
		35	Male	Head injury	None	Related	Reassured
		32	Male	Haemetemesis	Major	Related	Hospital
		24	Female	Alcohol, ecstasy, and diazepam poisoning	Major	Unrelated	Left against medical advice
		10	Male	Panic	None	Unrelated	Reassured
		52	Male	Urticaria	None	Unrelated	Advised to consult own GP
5/4/00	Motherwell	36	Male	Ankle injury	None	Related	Reassured
15/4/00	Dundee	27	Male	Ankle injury	None	Related	Ice, tubigrip
		19	Male	SVT 200/minute	Minor	Related	Successfully self treated by diver's reflex
		15	Male	Incapably drunk	Major	Related	Returned to parents' care by police
		22	Female	Dizziness and nausea	None	Related	Reassured
22/4/00	Hibernian	20	Male	Chest wall pains	None	Related	Reassured
		58	Male	Asthma	None	Related	Salbutamol inhaler
		54	Male	Fall: severely displaced ankle fracture	Major	Related	Hospital
		46	Female	Headache	None	Related	Paracetamol
		26	Female	Dizziness	None	Related	Reassured
		17	Female	"Prickly heat"	None	Unrelated	Reassured
6/5/00	Aberdeen	49	Male	Unstable angina	None	Related	Settled, IV access, hospital
		17	Female	Dyspepsia	None	Unrelated	Mucaine
		29	Male	Alcohol intoxication	Major	Related	Allowed home
		9	Male	Hand injury: hit by match ball	None	Related	"Buddy strapping"
		31	Female	Injury to upper arm	None	Related	Went to A&E for *x* ray
21/5/00	Dundee United	9	Male	Conjunctivitis	None	Unrelated	Advice
		35	Male	Baseball bat assault on way to game: nasal fracture, facial and back injuries	Major	Related	Hospital
		18	Male	Torticollis	None	Related	Paracetamol
		28	Male	Migraine: visual distortion	None	Related	Imigran, hospital

MI, Myocardial infarct; A&E, Accident and Emergency; TIA, transient ischaemic attack; URTI, upper respiratory tract infection; VF, ventricular fibrillation; BLS, basic life support; BP, blood pressure; RTA, road traffic accident; CABG, coronary artery bypass graft; IV, intravenous; GP, general practitioner; SVT, supraventicular tachycardia.

Discussion

The workload of the crowd doctors was both variable, ranging from one to 14 casualties per match, and diverse, ranging from toothache to cardiac arrest. It included surprising episodes such as two young men presenting on separate occasions with bereavement reactions, and unusual episodes such as a young man successfully treating his rapid supraventricular tachycardia by plunging his head into icy cold water. The busiest matches were the traditionally tense local derby matches with the club's city rival Rangers (fig 3). We have no doubt from our experience of previous years that the more there is at stake in a match, the busier the crowd doctors will be. The season 1999–2000 proved to be a disappointing season for Celtic resulting in reduced attendances and a subdued atmosphere. The current season has, however, started well, and we expect an increased workload if this progress is maintained.

The single cardiac arrest was less than we expected from previous seasons, with recent experiences including two cardiac arrests within ten minutes at the same match, both successfully resuscitated, and another match where successive casualties presented with cardiac arrest and dissection of an aortic aneurysm. With the availability of skilled medical care and rapid access to defibrillation, a football match is now one of the least adverse circumstances in which to have a cardiac arrest.

A cause for concern is the significant impact of alcohol intoxication on our workload. Celtic Park is a very well stewarded ground, and spectators under the influence of alcohol are not admitted. In common with other Scottish football grounds, alcohol is not on general sale. There is, however, a regrettable culture of heavy drinking in Scotland, with many consequences for local health and social services. The effects of rapid ingestion of alcohol before matches may not become apparent until after spectators have been admitted into the ground. It is of particular concern that two of the casualties affected by alcohol intoxication were children aged 14 and 15. This is a trend that has continued since this study was completed.

The welcome social trend of football spectating becoming a family event is reflected in the relatively high numbers of women and young children requiring attention. Of note too is the proportion of casualties attending the match in a capacity other than as spectators (table 1). It is likely that this reflects both an awareness on their part of the facilities available, and also the responsibility on catering and stewarding supervisors to ensure that any injuries sustained by their staff at work are treated and documented.

Finally we were interested in the town of residence of the casualties, seeing this as a possible factor influencing management of the casualty. It proved to be a relevant factor in one case only, a far travelled driver who could not safely be discharged because of visual distortion due to migraine, and had to be transferred to the local accident and emergency department for observation.

We are grateful to the senior officials of Celtic Football Club for their encouragement of this article, and for the support of Dr J Mulhearn, club medical advisor, whose responsibilities include the coordination of the crowd doctoring service. We are especially grateful to our colleagues in the Scottish Ambulance Service and the St Andrew's Ambulance Association.

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Take home message

Crowd medical care at football grounds requires cooperation among first aid workers, ambulance staff, and doctors. Doctors doing this work should have appropriate training and expertise.

Commentary

Sometimes the simplest observations in life prove to be the most pertinent and interesting. This paper is of interest to all of us who provide medical cover at sporting events in Britain. Following the three major disasters in British Football and the official reports that resulted, questions have been asked about the method of appointment and qualifications of club doctors[1] and the level of medical cover at sporting events.[2] This paper from the medical team for Glasgow Celtic Football Club emphasises the exceptional expertise of the team, their organisation for crowd control, and the type of casualties seen.

They illustrate the increasing diversity of casualties and the opportunistic nature of those seen, and comment on the rise in female and child casualties, which we hope is a reflection of the increasing numbers attending outwith the traditional adult male spectators.

Of most interest was the significant impact of alcohol intoxication on their workload, with almost one quarter of the casualties having alcohol as a contributory factor.

As sport becomes increasingly "professional" with spiralling financial rewards, sports governing bodies and clubs must ensure that those of us providing medical support do so with appropriate levels of training and experience. It is imperative that they provide the financial back up for this training and the provision of the medical cover that is recommended.

The days of unpaid and untrained medical support provided by doctors for the "love of the game" should be in the past—for our own sake as well as our patients.

J A MACLEAN
Department of Medicine and Therapeutics
University of Glasgow, Gardiner Institute
Western Infirmary, Glasgow G11 6NT, Scotland, UK

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